LEVEL II

SUSQUEHANNA RIVER BASIN

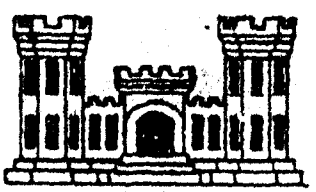
(7)

A086181

FINCH HOLLOW WATERSHED PROJECT
SITE 3C

BROOME COUNTY, NEW YORK
INVENTORY NO. N.Y. 724

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM



NEW YORK DISTRICT CORPS OF ENGINEERS

MARCH, 1980

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18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Dam Safety
National Dam Safety Program
Visual Inspection
Hydrology, Structural Stability
Finch Hollow Watershed
Project Site 3C
Broome County
Binghamton

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. → pir

The examination of documents and visual inspection of the Finch Hollow Site 3C Dam did not reveal conditions which constitute a hazard to human life or property.

The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).

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To assure the continued satisfactory performance of this structure, a schedule of periodic maintenance should be established. In addition, an emergency action plan for notification of downstream residents should be developed within 6 months of the date of notification of this report.

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
FINCH HOLLOW WATERSHED PROJECT SITE 3C
I.D. No. NY 724
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

TABLE OF CONTENTS

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam:	Finch Hollow, Little Choconut & Trout Brook Watershed Project Site 3C I.D. No. NY 724
State Located:	New York
County Located:	Broome
Watershed:	Susquehanna
Date of Inspection:	November 8, 1979

ASSESSMENT

The examination of documents and visual inspection of the Finch Hollow Site 3C Dam did not reveal conditions which constitute a hazard to human life or property.

The total discharge capacity of the spillways is adequate to impound and safely discharge the floodwaters resulting from the Probable Maximum Flood (PMF).

To assure the continued satisfactory performance of this structure, a schedule of periodic maintenance should be established. In addition, an emergency action plan for notification of downstream residents should be developed within 6 months of the date of notification of the owner.

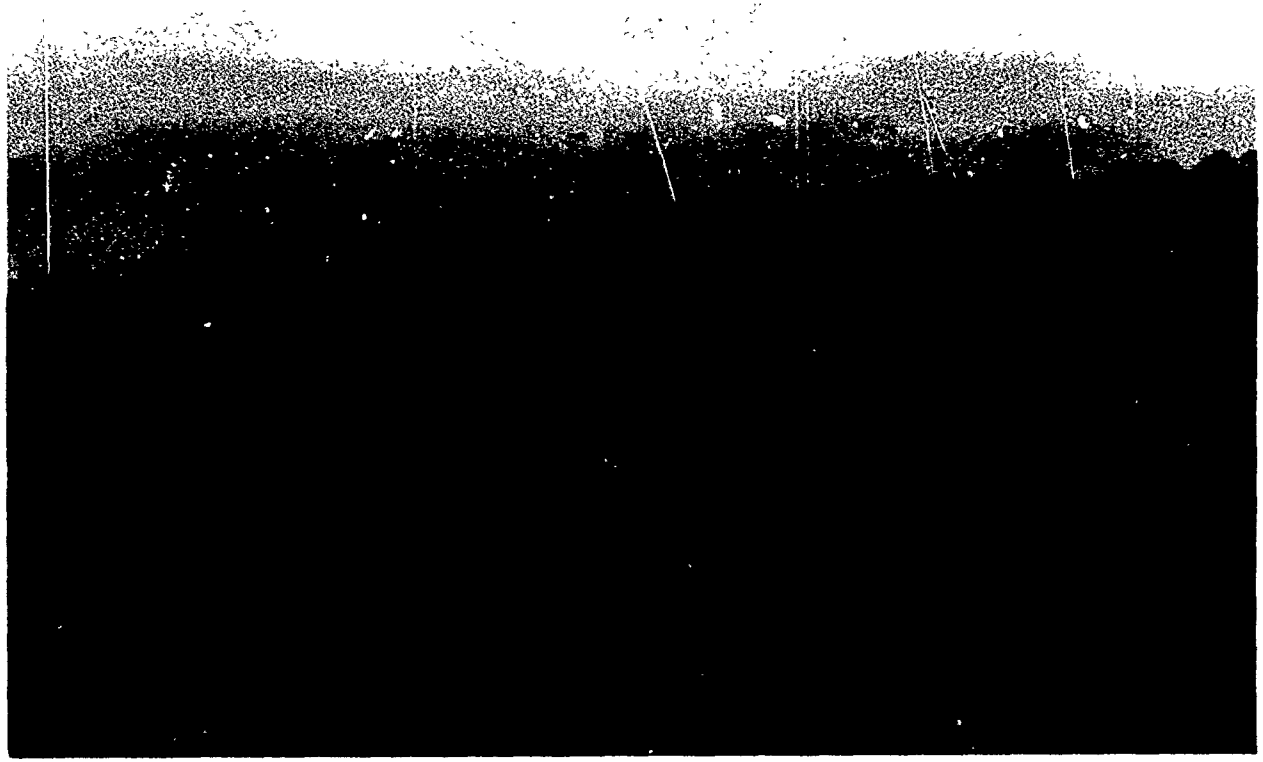
George Koch
Chief, Dam Safety Section
New York State Department
of Environmental Conservation
NY License No. 45937

Approved By:

Col. Clark H. Benn
New York District Engineer

Date: 2 MAY 80

IV



OVERVIEW
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
FINCH HOLLOW, LITTLE CHOCONUT, & TROUT BROOK WATERSHED PROJECT
SITE 3C
I.D. No. NY 724
(#96C-3445)
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if these deficiencies constitute hazards to life and property, and to recommend remedial measures where required.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam

The Finch Hollow Watershed Project Site 3C consists of an earth dam with a service spillway pipe passing through the embankment and an excavated auxiliary spillway passing around the northern end of the dam.

The dam consists of a compacted earth embankment which is 54 feet high, has a crest length of 590 feet, and a crest width of 14 feet. The upstream slope is a 1 vertical on 3 horizontal with a 10 foot wide berm near the base of the slope. The downstream slope is a 1 vertical on 2.5 horizontal. The crest and exposed slopes are covered with grass and crownvetch. An earth cutoff trench of varying depth and width keys the embankment into the foundation soils.

The principal spillway consists of a rectangular concrete drop inlet structure and a 30 inch diameter reinforced concrete pipe with anti-seepage collars. A reservoir drain consisting of a 6 inch diameter corrugated metal pipe extends from the upstream toe of the embankment to the base of the principal spillway riser. A vertical slide gate mechanism mounted along the inside of the riser controls the flow through the reservoir drain. The auxiliary spillway is in an earth cut with a bottom width of 100 feet.

An internal drainage system consisting of a gravel and sand filter is located at the base of the embankment near the downstream toe. Seepage is conducted through this drain to beyond the toe of the embankment.

b. Location

Finch Hollow Watershed Project Site 3C Dam is located approximately one third mile north of New York Route 17. A portion of the Ely Park Golf

Course is adjacent to the impoundment. The dam is in the City of Binghamton, New York.

c. Size Classification
The dam is 54 feet high and has a maximum storage capacity of 61 acre-feet. Therefore, the dam is in the intermediate size category as defined by the Recommended Guidelines for Safety Inspection of Dams.

d. Hazard Classification
The dam is classified as "high" hazard due to the presence of a number of homes and commercial establishments in the city of Binghamton as well as Route 17 downstream of the dam.

e. Ownership
The dam is owned by the County of Broome, New York. The contracting office representative is Charles Kark. His phone number is (607)772-2114.

f. Purpose of Dam
The dam is a floodwater retarding structure.

g. Design and Construction History
The dam was designed by the U.S. Department of Agriculture, Soil Conservatio Service (SCS). The SCS office at the Broome County Airport has a desig folder containing hydrologic, hydraulic and structural design information, in addition to the as-built plans and contract documents.

h. Normal Operating Procedures
Normal flows are discharged through the principal spillway. This structure has sufficient capacity to store and discharge a 100 year flood without discharge occuring in the auxiliary spillway. For storms in excess of the 100 year flood, discharge through the auxiliary spillway can be expected.

1.3 PERTINENT DATA

a. Drainage Area (acres)	198
b. Dishcarge at Dam (cfs)	
Principal spillway at maximum high water	23
Principal spillway at auxiliary spillway crest elevation	22
Auxiliary spillway at maximum high water	3187
Reservoir drain @ principal spillway crest ele.	6
c. Elevation (USGS Datum)	
Top of Dam	1156.2
Auxiliary Spillway Crest	1151.0
Principal Spillway Crest	1129.8
Reservoir Drain, invert elevation	1119.0
d. Reservoir Surface Area (acres)	
Top of dam	4.2
Auxiliary Spillway Crest	3.65
Principal Spillway Crest	0.97

e. Storage Capacity (acre-feet)

Top of dam	61.0
Auxiliary Spillway Crest	39.4
Principal Spillway Crest	4.5

f. Dam

Embankment type - A homogeneous, compacted earth fill with a keyed earth cut-off trench and drain parallel to axis of dam.

Embankment length (ft)	590
Slopes Upstream	1 vertical on 3 horizontal
Downstream	1 vertical on 2.5 horizontal
Crest width (ft)	14

g. Principal Spillway

Type: Ungated, reinforced concrete drop inlet (2.5 x 2.5 ft), rising 10.8 feet above the invert of the 30 inch diameter concrete conduit; length of conduit 224 feet

Weir length (ft)	0.92

h. Auxiliary Spillway

Type: Channel cut into earth with trapezoidal cross section.

Bottom Width (ft)		100
Side Slopes (V:H)	South Side	1:3
	North Side	1:2.5
Length of level section (ft)		30
Exit Slope (ft/ft)		0.025

i. Reservoir Drain

Type: 6 inch diameter corrugated metal pipe

Control: Manually operated vertical slide gate mounted along the inside of the principal spillway riser.

SECTION 2: ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

The Finch Hollow Watershed Project Site 3E Dam is located in the glaciated portion of the Appalachian uplands (northern extreme of the Appalachian Plateau) physiographic province of New York State. These uplands were formed by dissection of the uplifted but flat lying sandstones and shales of the Middle and Upper Devonian Catskill Delta. The plateau surface is represented by flat-topped divides with drainage generally southwest toward the Susquehanna River system.

Glacial cover is generally thin, although some north-south valleys are so thick that they are completely buried. The present surficial deposits have resulted primarily from glaciations during the Cenozoic Era, the last of which was the Wisconsin glaciation, approximately 11,000 years ago.

b. SUBSURFACE INVESTIGATIONS

A subsurface investigation program was conducted by SCS in 1964. This program consisted of 15 drill holes and 18 test pits at locations along the dam, auxiliary spillway, structural elements, and borrow area. Applicable subsurface information is included in Appendix F, Drawing #13.

In general, the soils in the vicinity of the dam are of glacial till origin, gravels and silts overlying a shaly silt - stone bedrock from 15 to 40 feet below the original ground surface. Most of the soils encountered have either slight or slow permeability.

2.2 DESIGN RECORDS

The dam was designed by the Soil Conservation Service, who prepared a design report. A folder containing the design report and other design information was available at the SCS office at the Broome County Airport. Thirteen drawings, several of which have been included in Appendix F, were prepared for the construction of this dam.

2.3 CONSTRUCTION RECORDS

The dam was built in 1966. Complete construction records are available from the SCS office at the Broome County airport. Any changes from the original design which were made during construction have been indicated on the as-built dams.

2.4 OPERATION RECORDS

Since the dam is an uncontrolled, floodwater retarding structure, no operating records are maintained regarding water levels. During periods of heavy rainfall, SCS personnel do monitor reservoir levels.

2.5 EVALUATION OF DATA

The data presented in this report has been compiled from information obtained from the Soil Conservation Service as well as the New York State Department of Environmental Conservation files. It appears to be adequate and reliable for Phase 1 inspection purposes.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the Site 3C Dam was conducted on November 8, 1979. The weather was overcast and the temperature was in the forties. The water surface at the time of the inspection was approximately 2 feet below the top of the principal spillway riser.

b. Embankment

No signs of distress were observed in the earth embankment and no evidence of misalignment, subsidence or surface cracking were noted on the embankment. There was some minor sloughing on the upstream face in the zone of water level fluctuation. Water was emerging from beneath the rock fill section at the toe on the southern end of the embankment. Since there are no collector pipes within the drain fill, this seepage is probably coming from the drainage system. Some brush and small trees were growing out of this rock fill section as well.

c. Principal Spillway

The principal spillway consists of a vertical drop inlet structure, a 30 inch diameter concrete pipe, and an outlet channel cut into natural ground. These components appeared to be in satisfactory condition. The orifice in the riser is rather small and limits the capacity of the principal spillway. There was a small void noted under the end of the concrete cradle beneath the principal spillway pipe. However, since this section was designed to support an 8 foot cantilever, this void will not affect the pipe.

d. Auxiliary Spillway

The auxiliary spillway for this structure is located in an earth cut at the northern end of the dam. The channel appeared to be in satisfactory condition.

e. Reservoir Drain

The 6 inch diameter reservoir drain and manually operated slide gate may be used to lower the reservoir level. This system was reported to be operational.

f. Downstream Channel

The downstream channel below the pipe outlet is riprapped for a short distance. Beyond the riprap, the channel is cut into natural ground. There were a number of trees growing along the channel.

g. Reservoir

There was some build up of sediment within the reservoir pool area. Two tributaries carry runoff from the golf course into the reservoir. The channel of these tributaries were riprapped, but the riprap had been undermined.

3.2 EVALUATION OF OBSERVATIONS

Visual observations did not reveal any problems which would adversely affect the safety of the dam. However, brush and small trees growing through the rockfill at the downstream toe on the southern end of the dam should be cut, excess sediments should be removed and a program of periodic maintenance should be established.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface elevation is at the crest of the principal spillway. Downstream flows are limited by the flow through the orifice on the principal spillway riser, except during periods of extremely heavy runoff when the auxiliary spillway is in service.

4.2 MAINTENANCE OF THE DAM

The dam is maintained by the owner, Broome County. The maintenance on this dam is generally satisfactory.

4.3 WARNING SYSTEM IN EFFECT

There is no warning system in effect.

4.4 EVALUATION

The operation and maintenance procedures for this structure are satisfactory.

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

Delineation of the 198 acre watershed of the Site 3C dam was made using the USGS. 7.5 minute quadrangle for Binghamton West, New York. The watershed consists of primarily grassed fields and woodlands on the Ely Park Golf Course. Relief in the drainage area is relatively steep.

5.2 ANALYSIS CRITERIA

The analysis of the floodwater retarding capability of this dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety version. This program develops an inflow hydrograph using the Snyder Snythetic Unit Hydrograph method and then uses the "Modified Puls" flood routing procedure. The spillway design flood selected was the Probable Maximum Flood (PMF) in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers.

5.3 SPILLWAY CAPACITY

The principal and auxiliary spillways are uncontrolled structures. The capacities for both spillways were taken from the stage-discharge curves included in the SCS design computations folder.

The spillways have sufficient capacity for discharging the peak outflow from the PMF. For this storm, the peak inflow is 638 cfs and the peak outflow is 637 cfs. When the spillways are discharging the peak outflow, the water surface will be 3.2 feet below the top of the dam. Further information concerning this analysis is included in Appendix C.

5.4 RESERVOIR CAPACITY

Normal flood control storage capacity of the reservoir between the principal and auxiliary spillways is 34.9 acre-feet which is equivalent to a runoff depth of 2.1 inches over the drainage area. Surcharge storage capacity to the maximum high water elevation is an additional 21.6 acre-feet, equivalent to a runoff depth over the drainage area of 1.3 inches. Total storage capacity of the dam is 61.0 acre-feet.

5.5 FLOODS OF RECORD

The maximum known flood occurred on September 27, 1975. The pool level at this time was reported to be about 10 feet above the principal spillway crest. The calculated discharge for this flood is as follows:

Elevation (USGS)	Discharge (cfs)
1139.8	19

5.6 OVERTOPPING POTENTIAL

Analysis indicates that the total discharge capacity is sufficient to prevent overtopping from the PMF.

5.7 EVALUATION

This dam has sufficient capability to impound and adequately discharge floodwaters expected to result from the PMF.

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No signs of distress were observed in connection with the earth embankment.

b. Design and Construction Data

Design data was obtained from the Soil Conservation Service office at the Broome County airport. Stability analyses were performed by SCS using a Swedish circle method of analysis. Various conditions were analyzed. The conditions applicable to the dam as it was constructed are as follows:

	MINIMUM FACTOR OF SAFETY	
CONDITION	UPSTREAM SLOPE	DOWNSTREAM SLOPE
Full Draw Down	2.3	---
Long Term Steady State Seepage	---	1.62

The calculated factors of safety for this dam are considered to be adequate.

c. Seismic Stability

No seismic stability analysis was performed for this structure.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I inspection of the Finch Hollow Site 3C dam did not reveal conditions which constitute a hazard to human life or property. The earth embankment is considered to be stable and the spillways are capable of retarding and safely discharging floodwaters resulting from the Probable Maximum Flood (PMF).

b. Adequacy of Information

Information reviewed for Phase I inspection purposes is considered to be adequate.

c. Need for Additional Investigations

No additional investigations are necessary at this time.

7.2 RECOMMENDED MEASURES

a. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including operation and lubrication of the slide gate mechanism. Document this information for future reference.

b. Develop an emergency action plan for notification of downstream residents and the proper authorities in the event of heavy auxiliary spillway discharge.

c. Cut the brush and trees growing through the rockfill at the downstream toe on the southern end of the dam.

d. Remove the excess sediment deposition near the two reservoir inflow tributaries.

APPENDIX A

PHOTOGRAPHS

Crest of Embankment

Principal Spillway Riser, Inlet on Left Side

Upstream Slope of Dam with Auxiliary
Spillway Channel at Northern End

Upstream End of Auxiliary Spillway Channel

Outlet to Principal Spillway Conduit and Downstream Channel

Undermined Concrete Cradle at Outlet of Principal Spillway Conduit

Rock Fill Section at Toe on Southern End of Embankment

Seepage Emerging From Rock Fill Section

Upstream Slope and Reservoir Pool, Tributary on Top Right

Undermined Riprap on Tributary Shown Above

APPENDIX B

VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam FINCH HOLLOW SITE 3C

Fed. I.D. # 724 DEC Dam No. 96C-3445

River Basin SUSQUEHANNA

Location: Town BINGHAMTON County BROOME

Stream Name TROUT BROOK

Tributary of

Latitude (N) 42° 7.1' Longitude (W) 75° 55.8'

Type of Dam EARTH

Hazard Category C

Date(s) of Inspection 11/8/79

Weather Conditions 40° OVERCAST

Reservoir Level at Time of Inspection 28" BELOW TOP OF RISER

b. Inspection Personnel R. WARRENDER W. LYNICK

c. Persons Contacted (Including Address & Phone No.)

GARY PAGE - SCS AREA OFFICE BROOME CO. AIRPORT 607-773-2751

SCOTT SNOVER - SCS SYRACUSE OFFICE 315-423-5526

d. History:

Date Constructed 1966 Date(s) Reconstructed

Designer SCS

Constructed By

Owner BROOME COUNTY

2) Embankment

a. Characteristics

(1) Embankment Material HOMOGENEOUS EARTH FILL

(2) Cutoff Type EARTH

(3) Impervious Core NONE

(4) Internal Drainage System NONE

(5) Miscellaneous ALL SLOPES - CROWN VETCH WITH GRASS SATISFACTORY VEGETATIVE COVER

b. Crest

(1) Vertical Alignment POSITIVE CAMBER OVER PRINCIPAL SPILLWAY CONDUIT

(2) Horizontal Alignment CURVILINEAR - SATISFACTORY

(3) Surface Cracks NONE

(4) Miscellaneous

c. Upstream Slope

(1) Slope (Estimate) (V:H) 1 ON 3

(2) Undesirable Growth or Debris, Animal Burrows NONE

(3) Sloughing, Subsidence or Depressions MINOR SLOUGHING IN ZONE OF WATER LEVEL FLUCTUATION - PRESENT WATER SURFACE TO 6' ABOVE TOP OF RISER

(4) Slope Protection NONE

(5) Surface Cracks or Movement at Toe NONE

d. Downstream Slope

(1) Slope (Estimate - V:H) 1 on 2.5

(2) Undesirable Growth or Debris, Animal Burrows NONE - IN WASTE ROCK AREA - SEVERAL TREES & LIGHT BRUSH GROWS THROUGH THE ROCK

(3) Sloughing, Subsidence or Depressions NONE

(4) Surface Cracks or Movement at Toe NONE

(5) Seepage LESS THAN 1 GAL/MIN AT BOTTOM OF VALLEY AT WASTE ROCK AREA SOUTH SIDE

(6) External Drainage System (Ditches, Trenches; Blanket) ROCK TOE DRAIN

(7) Condition Around Outlet Structure VOID - SEE SERV. SPILLWAY SECTION

(8) Seepage Beyond Toe No

e. Abutments - Embankment Contact

NO RIPRAP CHANNELS ALONG EMBANKMENT - ABUTMENT INTERFACE

(1) Erosion at Contact NONE

(2) Seepage Along Contact ALONG SOUTH DOWNSTREAM CONTACT 6'± ABOVE TOP WASTE ROCK TOE - MINOR SEEPAGE (<1 GAL/MIN) · COULD BE HILLSIDE SEEPAGE

3) Drainage System

a. Description of System NONE VISIBLE

b. Condition of System

c. Discharge from Drainage System

4) Instrumentation (Momumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.)

NONE

5) Reservoir

a. Slopes STEEP

b. Sedimentation SIGNIFICANT AMOUNT FROM 2 TRIBUTARIES CARRYING DIRECT RUNOFF FROM GOLF COURSE

c. Unusual Conditions Which Affect Dam

6) Area Downstream of Dam

a. Downstream Hazard (No. of Homes, Highways, etc.) CITY OF BINGHAMTON AND ROUTE 17

b. Seepage, Unusual Growth NONE

c. Evidence of Movement Beyond Toe of Dam NONE

d. Condition of Downstream Channel V SHAPED - STEEP - TREE LINED

7) Spillway(s) (Including Discharge Conveyance Channel)

a. General OLD STYLE SCS RISER-ON SERVICE SPILLWAY ITS USE WAS DISCONTINUED IN FUTURE DESIGNS SHORTLY AFTER THIS WAS BUILT

b. Condition of Service Spillway SATISFACTORY - HOWEVER ORIFICE IS VERY SMALL - SMALL VOID UNDER CONCRETE CRADLE FOR CANTELEVERED OUTLET PIPE

c. Condition of Auxiliary Spillway SATISFACTORY

d. Condition of Discharge Conveyance Channel
STEEP VALLEY WITH TREES LITTLE RIPRAP

8) Reservoir Drain/Outlet

Type: Pipe X Conduit _____ Other _____

Material: Concrete _____ Metal CMP Other _____

Size: 6" Length 36'

Invert Elevations: Entrance 1119.0 Exit 1119.0

Physical Condition (Describe): Unobservable X

Material: _____

Joints: _____ Alignment _____

Structural Integrity: _____

Hydraulic Capability: _____

Means of Control: Gate X Valve _____ Uncontrolled _____

Operation: Operable X Inoperable _____ Other _____

Present Condition (Describe): APPEARED SATISFACTORY

9) Structural

a. Concrete Surfaces GOOD

b. Structural Cracking NONE

c. Movement - Horizontal & Vertical Alignment (Settlement)
NO MOVEMENT EVIDENT

d. Junctions with Abutments or Embankments SATISFACTORY

e. Drains - Foundation, Joint, Face NONE

f. Water Passages, Conduits, Sluices GOOD

g. Seepage or Leakage NONE

h. Joints - Construction, etc. _____

i. Foundation _____

j. Abutments _____

k. Control Gates _____

l. Approach & Outlet Channels _____

m. Energy Dissipators (Plunge Pool, etc.) MEDIUM RIPRAP PILED UP AT OUTLET FOR INTERIM DISTANCE

n. Intake Structures SERVICE SPILLWAY RISER- OKAY BUT SMALL

o. Stability _____

p. Miscellaneous _____

APPENDIX C

HYDROLOGIC/HYDRAULIC ENGINEERING DATA AND COMPUTATIONS

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

AREA-CAPACITY DATA:

	Elevation (ft.)	Surface Area (acres)	Storage Capacity (acre-ft.)
1) Top of Dam	1156.2	4.20	61.0
2) Design High Water (Max. Design Pool)			
3) Auxiliary Spillway Crest	1151.0	3.65	39.4
4) Pool Level with Flashboards			
5) Service Spillway Crest	1129.8	0.97	4.5

DISCHARGES

	Volume (cfs)
1) Average Daily	
2) Spillway @ Maximum High Water	23.4
3) Spillway @ Design High Water	
4) Spillway @ Auxiliary Spillway Crest Elevation	22.1
5) Low Level Outlet	5.8
6) Total (of all facilities) @ Maximum High Water	3210
7) Maximum Known Flood	18.9

CREST: ELEVATION: 1156.2

Type: EARTH

Width: 14 Length: _____

Spillover AUXILIARY CHANNEL

Location NORTHERN END

SPILLWAY:

PRINCIPAL		EMERGENCY
1129.8	Elevation	1151.0
RC DROP INLET	Type	TRAPEZOIDAL CHANNEL
2.5' x 2.5'	Width	100'
	Type of Control	
✓	Uncontrolled	✓
	Controlled:	
	Type (Flashboards; gate)	
	Number	
	Size/Length	
	Invert Material	
	Anticipated Length of operating service	
	Chute Length	
	Height Between Spillway Crest & Approach Channel Invert (Weir Flow)	

OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES:

Type: Gate √ Sluice _____ Conduit _____ Penstock _____

Shape : GATE-FLAT CIRCULAR CONDUIT-ROUND METAL

Size: 6" 6"

Elevations: Entrance Invert 1119.0

Exit Invert 1119.0

Tailrace Channel: Elevation _____

HYDROMETEROLOGICAL GAGES:

Type : NONE

Location: _____

Records:

Date - NONE

Max. Reading - _____

FLOOD WATER CONTROL SYSTEM:

Warning System: NONE

_____

Method of Controlled Releases (mechanisms):

RESERVOIR DRAIN

_____

DRAINAGE AREA: 198 ACRES

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: GOLF COURSE

Terrain - Relief: STEEP

Surface - Soil:

Runoff Potential (existing or planned extensive alterations to existing (surface or subsurface conditions)

NONE

Potential Sedimentation problem areas (natural or man-made; present or future)

TRIBUTARIES COMING IN SEEM TO BRING A LARGE AMOUNT OF GRAVEL & OTHER SEDIMENT INTO RESERVOIR POOL AREA.

Potential Backwater problem areas for levels at maximum storage capacity including surcharge storage:

NONE

Dikes - Floodwalls (overflow & non-overflow) - Low reaches along the Reservoir perimeter:

Location: NONE

Elevation:

Reservoir:

Length @ Maximum Pool _____ (Miles)

Length of Shoreline (@ Spillway Crest) _____ (Miles)

00-15-1 (3/78)
Formerly GA-17

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROJECT GRID

JOB	SHEET NO.	CHECKED BY	DATE
FINCH HOLLOW SITE 3C	1		
SUBJECT		**COMPUTED BY**	**DATE**
HYDROLOGIC / HYDRAULIC COMPUTATIONS		RLW	3/18/80

PRINCIPAL SPILLWAY CAPACITY

FROM SCS REPORT - FORMULAS

ORIFICE FLOW: $Q = 3.42 h^{\frac{1}{2}}$

WEIR FLOW: $Q = 2.85 h^{\frac{3}{2}}$

WATER SURFACE AT TOP OF DAM

$Q = 3.42 (1156.2 - 1109.25)^{\frac{1}{2}}$

THIS CONTROLS → $= 23.43$ cfs

$Q = 2.85 (1156.2 - 1129.8)^{\frac{3}{2}}$

$= 386.6$ cfs

WATER SURFACE AT AUXILIARY SPILLWAY CREST

$Q = 3.42 (1151.0 - 1109.25)^{\frac{1}{2}}$

THIS CONTROLS → $Q = 22.1$ cfs

$Q = 2.85 (1151.0 - 1129.8)^{\frac{3}{2}}$

$= 278.2$ cfs

MAXIMUM KNOWN WATER SURFACE (ELEVATION 1139.8)

$Q = 3.42 (1139.8 - 1109.25)^{\frac{1}{2}}$

THIS CONTROLS → $= 18.9$ cfs

$Q = 2.85 (1139.8 - 1129.8)^{\frac{3}{2}}$

$= 90.1$ cfs

RESERVOIR DRAIN CAPACITY

WATER SURFACE AT PRINCIPAL SPILLWAY CREST

$$Q = \pi (.5)^2 \sqrt{\frac{2(32.2)(1129.8 - 1119.25)}{1 + .5 + 0 + .292(37)}} = 5.8 \text{ cfs}$$

COMPUTATION SHEET
SCS-523 REV 5-58

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

GPO 1958 O-470867

STATE		PROJECT			
NY		L. Choconut WS - Trout Brook - Site 3C			
BY	DATE	CHECKED BY	DATE	JOB NO.	
JHH	12/64	LCI	12/64	NY-2020	

SUBJECT Computations for Principal Spillway Flow SHEET 4-1 OF

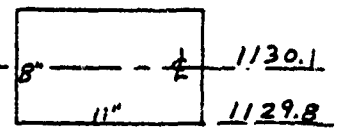
Maximum average Release Rate limited to 10cfs

∴ Max. Discharge of orifice = $Q_m = \frac{10}{0.6} = 16.7$ cfs

Head from orifice ℄ to crest emergency spillway = 1153.0 − 1130.1 = 22.9'

Area of Orifice = $A = \frac{Q}{C\sqrt{2gh}} = \frac{16.7}{(0.7)(8.02)(4.8)} = 0.62$ ft²

USE 8"X11" Orifice
A = 88"□ = 0.61 ft²



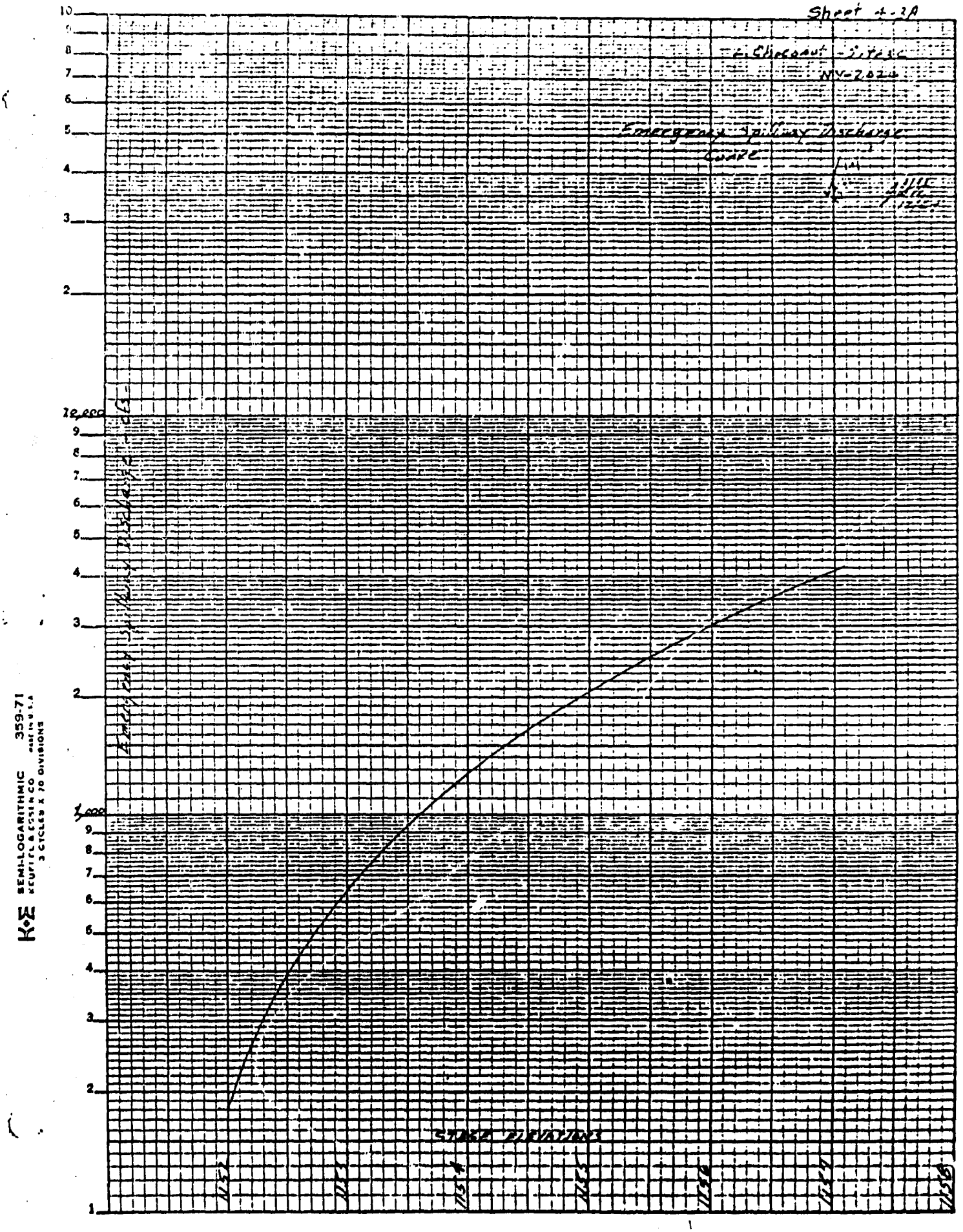
Orifice Flow

$Q_o = (0.7)(0.61)(8.02)\,h^{\frac{1}{2}} = 3.42\,h^{\frac{1}{2}}$

Use 30" principal spillway conduit; pipe flow will not occur because of orifice limitation.

Weir Flow @ Crest of Orifice

$Q_w = CLH^{3/2} = 3.1 \times 0.92 \times h^{3/2} = 2.85\,h^{3/2}$


Sheet 4-2A
Emergency Spillway Discharge
Curve
STAGE ELEVATIONS
K&E SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO
3 CYCLES X 70 DIVISIONS

Sheet 3-2

K&E 10 X 10 TO THE INCH 46 0703
KEUFFEL & ESSER CO.
MADE IN U.S.A.

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**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1978
  LAST MODIFICATION  26 FEB 79
  MODIFIED BY  MCDONNELL APR 79
**********
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****
NEW YORK STATE
DEPT OF ENVIRONMENTAL CONSERVATION
FLOOD PROTECTION BUREAU
****

Sept. '82 Jack Clarke

```
    1          A1   TROUT BROOK   SITE 3C
    2          A2   PHASE I
    3          A3   PMF
    4          J    100       0       15       0       0       0       0       0       0       0
    5          J1     5
    6          J      1       2        1
    7          J1    .5       1
    8          K      0       1                        2               1
    9          K1   INFLOW FROM BASIN
   10          Y      1       1     0.31
   11          P      0    20.5      111     123     133     142
   12          T                                                   1      .1
   13          I  2.45     .625
   14          X  -2.0     -.05       1
   15          K      1       1                        2               1
   16          K1   ROUTE THROUGH RESERVOIR
   17          Y                               1       1
   18          YI     1                                        -1129.8      -1
   19          Y41129.8  1131.5    1135    1140    1150    1152    1153    1154    1156    1157
   20          YS     0       4     7.5    10.8    15.3     180     640    1280    3000    4150
   21          SS   1.5     4.6      10      17    27.4      41      59
   22          SE  1125    1130    1135    1140    1145    1150    1155
   23          S
   24          $01150.2       3     1.5     600
   25          K     99
   26          X
   27          X
```

****
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1978
MODIFICATION 25 FEB 79
****

****
NEW YORK STATE
DEPT OF ENVIRONMENTAL CONSERVATION
FLOOD PROTECTION BUREAU
****

TEST RUN FOR SITE 3C
PHASE I
PMF

JOB SPECIFICATION

NO	NHR	NMIN	IDAY	IHR	IMIN	METRC	IPLT	IPRT	NSTAN
100	0	15	0	0	0	0	0	0	0

JOPER	NWT	LROPT	TRACE
5	0	0	0

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 NRTIO= 2 LRTIOP= 1
RTIOS= 0.50 1.00

****

SUB-AREA RUNOFF COMPUTATION

INFLOW FROM BASIN

ISTAO	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	2	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUNG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	0.31	0.	0.31	0.	0.	0	0	0

PRECIP DATA

SPFE	PRS	R6	R12	R24	R48	R72	R96
0.	20.50	111.00	123.00	133.00	142.00	0.	0.

TRSPC COMPUTED BY THE PROGRAM IS 0.800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.	0.	1.00	0.	0.	1.00	1.00	0.10	0.	0.

UNIT HYDROGRAPH DATA
TP= 2.45 CP=0.63 LAG= 0

RECESSION DATA
STRTQ= -1.00 QRCSN= -0.05 RTIOR= 1.00
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC=10.90 AND R= 9.11 INTERVALS

UNIT HYDROGRAPH 55 END-OF-PERIOD ORDINATES, LAG= 2.45 HOURS, CP= 0.63 VOL= 1.00

2.	6.	12.	19.	27.	35.	42.	46.	51.	52.
51.	47.	42.	38.	34.	0.	27.	24.	22.	20.
18.	16.	14.	13.	11.	10.	9.	8.	7.	7.
6.	5.	5.	4.	4.	3.	3.	3.	2.	2.
2.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	0.	0.					

1.01	0.15	3	0.00	0.	0.00	1.	1.00	1.00	99	0.03	0.00	0.03	1.
1.01	1.00	4	0.00	0.	0.00	1.	1.02	1.00	100	0.03	0.00	0.03	1.
1.01	1.15	5	0.00	0.	0.00	1.	0.	0.	101	0.03	0.00	0.03	1.
1.01	1.30	6	0.00	0.	0.00	1.	0.	0.	102	0.03	0.00	0.03	1.
1.01	1.45	7	0.00	0.	0.00	1.	0.	0.	103	0.03	0.00	0.03	1.
1.01	2.00	8	0.00	0.	0.00	1.	0.	0.	104	0.03	0.00	0.03	2.
1.01	2.15	9	0.00	0.	0.00	1.	0.	0.	105	0.03	0.00	0.03	2.
1.01	2.30	10	0.00	0.	0.00	1.	0.	0.	106	0.03	0.00	0.03	2.
1.01	2.45	11	0.00	0.	0.00	1.	0.	0.	107	0.03	0.00	0.03	2.
1.01	3.00	12	0.00	0.	0.00	1.	0.	0.	108	0.03	0.00	0.03	2.
1.01	3.15	13	0.00	0.	0.00	1.	0.	0.	109	0.03	0.00	0.03	2.
1.01	3.30	14	0.00	0.	0.00	1.	0.	0.	110	0.03	0.00	0.03	2.
1.01	3.45	15	0.00	0.	0.00	1.	0.	0.	111	0.03	0.00	0.03	2.
1.01	4.00	16	0.00	0.	0.00	1.	0.	0.	112	0.03	0.00	0.03	2.
1.01	4.15	17	0.00	0.	0.00	1.	0.	0.	113	0.03	0.00	0.03	2.
1.01	4.30	18	0.00	0.	0.00	1.	0.	0.	114	0.03	0.00	0.03	2.
1.01	4.45	19	0.00	0.	0.00	1.	0.	0.	115	0.03	0.00	0.03	2.
1.01	5.00	20	0.00	0.	0.00	1.	0.	0.	116	0.03	0.00	0.03	2.
1.01	5.15	21	0.00	0.	0.00	1.	0.	0.	117	0.03	0.00	0.03	2.
1.01	5.30	22	0.00	0.	0.00	1.	0.	0.	118	0.03	0.00	0.03	2.
1.01	5.45	23	0.00	0.	0.00	1.	0.	0.	119	0.03	0.00	0.03	2.
1.01	6.00	24	0.00	0.	0.00	1.	0.	0.	120	0.03	0.00	0.03	2.
1.01	6.15	25	0.01	0.	0.01	1.	0.	0.	121	0.08	0.06	0.03	2.
1.01	6.30	26	0.01	0.	0.01	1.	0.	0.	122	0.08	0.06	0.03	3.
1.01	6.45	27	0.01	0.	0.01	1.	0.	0.	123	0.08	0.06	0.03	3.
1.01	7.00	28	0.01	0.	0.01	1.	0.	0.	124	0.08	0.06	0.03	4.
1.01	7.15	29	0.01	0.	0.01	1.	0.	0.	125	0.08	0.06	0.03	6.
1.01	7.30	30	0.01	0.	0.01	1.	0.	0.	126	0.08	0.06	0.03	8.
1.01	7.45	31	0.01	0.	0.01	1.	0.	0.	127	0.08	0.06	0.03	10.
1.01	8.00	32	0.01	0.	0.01	1.	0.	0.	128	0.08	0.06	0.03	13.
1.01	8.15	33	0.01	0.	0.01	1.	0.	0.	129	0.08	0.06	0.03	16.
1.01	8.30	34	0.01	0.	0.01	1.	0.	0.	130	0.08	0.06	0.03	19.
1.01	8.45	35	0.01	0.	0.01	1.	0.	0.	131	0.08	0.06	0.03	21.
1.01	9.00	36	0.01	0.	0.01	1.	0.	0.	132	0.08	0.06	0.03	24.
1.01	9.15	37	0.01	0.	0.01	1.	0.	0.	133	0.08	0.06	0.03	26.
1.01	9.30	38	0.01	0.	0.01	1.	0.	0.	134	0.08	0.06	0.03	28.
1.01	9.45	39	0.01	0.	0.01	1.	0.	0.	135	0.08	0.06	0.03	30.
1.01	10.00	40	0.01	0.	0.01	1.	0.	0.	136	0.08	0.06	0.03	32.
1.01	10.15	41	0.01	0.	0.01	1.	0.	0.	137	0.08	0.06	0.03	33.
1.01	10.30	42	0.01	0.	0.01	1.	0.	0.	138	0.08	0.06	0.03	35.
1.01	10.45	43	0.01	0.	0.01	1.	0.	0.	139	0.08	0.06	0.03	36.
1.01	11.00	44	0.01	0.	0.01	1.	0.	0.	140	0.08	0.06	0.03	37.
1.01	11.15	45	0.01	0.	0.01	1.	0.	0.	141	0.08	0.06	0.03	38.
1.01	11.30	46	0.01	0.	0.01	1.	0.	0.	142	0.08	0.06	0.03	39.
1.01	11.45	47	0.01	0.	0.01	1.	0.	0.	143	0.08	0.06	0.03	40.
1.01	12.00	48	0.01	0.	0.01	1.	0.	0.	144	0.08	0.06	0.03	40.
1.01	12.15	49	0.03	0.	0.03	1.	0.	0.	145	0.46	0.43	0.02	41.
1.01	12.30	50	0.03	0.	0.03	1.	0.	0.	146	0.46	0.43	0.02	44.
1.01	12.45	51	0.03	0.	0.03	1.	0.	0.	147	0.46	0.43	0.02	49.
1.01	13.00	52	0.03	0.	0.03	1.	0.	0.	148	0.46	0.43	0.02	57.
1.01	13.15	53	0.04	0.	0.04	1.	0.	0.	149	0.55	0.52	0.02	68.
1.01	13.30	54	0.04	0.	0.04	1.	0.	0.	150	0.55	0.52	0.02	82.
1.01	13.45	55	0.04	0.	0.04	1.	0.	0.	151	0.55	0.52	0.02	99.
1.01	14.00	56	0.04	0.	0.04	1.	0.	0.	152	0.55	0.52	0.02	119.
1.01	14.15	57	0.05	0.	0.05	1.	0.	0.	153	0.68	0.66	0.02	141.
1.01	14.30	58	0.05	0.	0.05	1.	0.	0.	154	0.68	0.66	0.02	165.
1.01	14.45	59	0.05	0.	0.05	1.	0.	0.	155	0.68	0.66	0.02	189.
1.01	15.00	60	0.05	0.	0.05	1.	0.	0.	156	0.68	0.66	0.02	214.
1.01	15.15	61	0.05	0.	0.05	1.	0.	0.	157	0.69	0.67	0.02	238.
1.01	15.30	62	0.09	0.	0.09	1.	0.	0.	158	1.38	1.36	0.03	264.
1.01	15.45	63	0.26	0.03	0.23	1.	0.	0.	159	3.87	3.85	0.03	295.
1.01	16.00	64	0.07	0.04	0.03	1.	0.	0.	160	0.97	0.94	0.02	336.

1.01	17.15	69	0.03	0.01	0.03	5.	0.	0.	165	0.50	0.48	0.02	574.
1.01	17.30	70	0.03	0.01	0.03	6.	0.	0.	166	0.50	0.48	0.02	606.
1.01	17.45	71	0.03	0.01	0.03	7.	0.	0.	167	0.50	0.48	0.02	628.
1.01	18.00	72	0.03	0.01	0.03	7.	0.	0.	168	0.50	0.48	0.02	638.
1.01	18.15	73	0.00	0.	0.00	8.	0.	0.	169	0.04	0.02	0.03	635.
1.01	18.30	74	0.00	0.	0.00	9.	0.	0.	170	0.04	0.02	0.03	617.
1.01	18.45	75	0.00	0.	0.00	9.	0.	0.	171	0.04	0.02	0.03	591.
1.01	19.00	76	0.00	0.	0.00	9.	0.	0.	172	0.04	0.02	0.03	562.
1.01	19.15	77	0.00	0.	0.00	8.	0.	0.	173	0.04	0.02	0.03	530.
1.01	19.30	78	0.00	0.	0.00	8.	0.	0.	174	0.04	0.02	0.03	496.
1.01	19.45	79	0.00	0.	0.00	7.	0.	0.	175	0.04	0.02	0.03	460.
1.01	20.00	80	0.00	0.	0.00	7.	0.	0.	176	0.04	0.02	0.03	423.
1.01	20.15	81	0.00	0.	0.00	6.	0.	0.	177	0.04	0.02	0.03	386.
1.01	20.30	82	0.00	0.	0.00	6.	0.	0.	178	0.04	0.02	0.03	350.
1.01	20.45	83	0.00	0.	0.00	5.	0.	0.	179	0.04	0.02	0.03	316.
1.01	21.00	84	0.00	0.	0.00	5.	0.	0.	180	0.04	0.02	0.03	284.
1.01	21.15	85	0.00	0.	0.00	4.	0.	0.	181	0.04	0.02	0.03	256.
1.01	21.30	86	0.00	0.	0.00	4.	0.	0.	182	0.04	0.02	0.03	231.
1.01	21.45	87	0.00	0.	0.00	4.	0.	0.	183	0.04	0.02	0.03	208.
1.01	22.00	88	0.00	0.	0.00	3.	0.	0.	184	0.04	0.02	0.03	188.
1.01	22.15	89	0.00	0.	0.00	3.	0.	0.	185	0.04	0.02	0.03	170.
1.01	22.30	90	0.00	0.	0.00	3.	0.	0.	186	0.04	0.02	0.03	153.
1.01	22.45	91	0.00	0.	0.00	3.	0.	0.	187	0.04	0.02	0.03	139.
1.01	23.00	92	0.00	0.	0.00	2.	0.	0.	188	0.04	0.02	0.03	126.
1.01	23.15	93	0.00	0.	0.00	2.	0.	0.	189	0.04	0.02	0.03	114.
1.01	23.30	94	0.00	0.	0.00	2.	0.	0.	190	0.04	0.02	0.03	104.
1.01	23.45	95	0.00	0.	0.00	2.	0.	0.	191	0.04	0.02	0.03	94.
1.02	0.	96	0.00	0.	0.00	2.	0.	0.	192	0.04	0.02	0.03	86.
									SUM	23.29	19.59	3.70	15005.
										(592.)(	498.)(	94.)(	424.89)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	638.	461.	154.	78.	14939.
CMS	18.	13.	4.	2.	423.
INCHES		13.84	13.44	15.68	18.68
MM		351.61	468.29	474.43	474.43
AC-FT		229.	305.	309.	309.
THOUS CU M		282.	376.	381.	381.

MVP

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	1.	1.	1.	2.	2.	3.
3.	4.	4.	4.	4.	4.	4.	4.	4.	3.
3.	3.	3.	2.	2.	2.	2.	2.	2.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	2.	2.	3.	4.	5.	6.	8.	9.
11.	12.	13.	14.	15.	16.	17.	17.	18.	18.
19.	19.	20.	20.	21.	22.	25.	29.	34.	41.
50.	59.	70.	82.	95.	107.	119.	132.	148.	168.
192.	217.	242.	266.	287.	303.	314.	319.	317.	308.
295.	281.	265.	248.	230.	212.	193.	175.	158.	142.
128.	115.	104.	94.	85.	77.	69.	63.	57.	52.
47.	43.								

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	319.	231.	77.	39.	7469.
CMS	9.	7.	2.	1.	212.
INCHES		6.92	9.22	9.34	9.34
MM		175.80	234.14	237.21	237.21
AC-FT		114.	152.	154.	154.
THOUS CU M		141.	188.	190.	190.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 2

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	2.	3.	4.	5.	6.
7.	7.	8.	9.	9.	9.	8.	8.	7.	7.
6.	6.	5.	5.	4.	4.	4.	3.	3.	3.
3.	2.	2.	2.	2.	2.	2.	2.	1.	1.
1.	1.	1.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	3.	3.	4.	6.	8.	10.	13.	16.	19.
21.	24.	26.	28.	30.	32.	33.	35.	36.	37.
38.	39.	40.	40.	41.	44.	49.	57.	68.	82.
99.	119.	141.	165.	189.	214.	238.	264.	295.	336.
384.	433.	484.	532.	574.	606.	628.	638.	635.	617.
591.	562.	530.	496.	460.	423.	386.	350.	316.	284.
256.	231.	208.	186.	170.	153.	139.	126.	114.	104.
94.	86.								

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	638.	461.	154.	78.	14939.
CMS	18.	13.	4.	2.	423.
INCHES		13.84	18.44	18.68	18.68
MM		351.61	468.29	474.43	474.43
AC-FT		229.	305.	309.	309.

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

ROUTE THROUGH RESERVOIR

ISTAO	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	1	0	0	2	0	1	0	0

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.	0.	0.	1	1	0	0	0

NSTPS	NSTOL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.	0.	0.	-1130.	-1

STAGE	1129.00	1131.50	1135.00	1140.00	1150.00	1152.00	1153.00	1154.00	1156.00	1157.00
FLOW	0.	4.00	7.50	10.80	15.30	180.00	640.00	1280.00	3000.00	4150.00
CAPACITY=	2.	5.	10.	17.	27.	41.	59.			
ELEVATION=	1125.	1130.	1135.	1140.	1145.	1150.	1155.			

CREL	SPWID	COOW	EXPW	ELEVL	COOL	CAREA	EXPL
1129.8	0.	0.	0.	0.	0.	0.	0.

DAM DATA

TOPEL	COOD	EXPD	DAMWID
1156.2	3.0	1.5	600.

WARNING *** TOP OF DAM, BOTTOM OF BREACH OR LOW-LEVEL OUTLET IS NOT WITHIN RANGE OF GIVEN ELEVATIONS IN STORAGE-ELEVATION DATA
BOTTOM OF RESERVOIR ASSUMED TO BE AT 1125.00
STORAGE-ELEVATION DATA WILL BE EXTRAPOLATED ABOVE ELEVATION 1155.00

STATION 1, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.	1.	1.	1.	1.	1.	2.	2.	1.	1.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
3.	3.	3.	4.	4.	5.	7.	8.	8.	8.
6.	6.	6.	6.	7.	7.	8.	12.	13.	13.
9.	9.	9.	10.	11.	11.	12.	12.	13.	12.
14.	15.	15.	102.	169.	290.	311.	317.	318.	312.
301.	287.	271.	255.	237.	219.	200.	182.	175.	165.
154.	141.	129.	116.	107.	97.	88.	80.	72.	65.
59.	54.								

STORAGE

4.	4.	4.	4.	4.	5.	5.			
5.									

5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	3.	5.	5.	5.	5.	5.	5.	5.
6.	[illegible]	6.	6.	6.	7.	7.	7.	7.	6.
8.	[illegible]	8.	9.	9.	9.	10.	10.	11.	11.
12.	13.	14.	15.	17.	[illegible]	21.	23.	26.	29.
32.	36.	41.	45.	48.	[illegible]	49.	49.	49.	49.
49.	49.	49.	49.	49.	[illegible]	48.	48.	48.	48.
47.	47.	45.	45.	45.	45.	44.	44.	43.	43.
43.	43.								

STAGE

1129.8	1129.3	1129.8	1129.8	1129.8	1129.8	1129.8	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1129.9	1129.9	1129.9	1130.0	1130.0	1130.0	1130.0	1130.1
1130.1	1130.2	1130.2	1130.3	1130.3	1130.4	1130.5	1130.5	1130.5	1130.6
1130.6	1130.6	1130.6	1130.7	1130.7	1130.7	1130.7	1130.7	1130.6	1130.6
1130.6	1130.6	1130.6	1130.6	1130.6	1130.5	1130.5	1130.5	1130.5	1130.5
1130.5	1130.4	1130.4	1130.4	1130.4	1130.4	1130.4	1130.4	1130.4	1130.4
1130.4	1130.3	1130.3	1130.3	1130.3	1130.3	1130.3	1130.3	1130.3	1130.3
1130.3	1130.3	1130.3	1130.3	1130.4	1130.4	1130.5	1130.5	1130.6	1130.8
1130.9	1131.1	1131.3	1131.4	1131.6	1131.9	1132.1	1132.3	1132.6	1132.8
1133.1	1133.3	1133.6	1133.9	1134.1	1134.4	1134.7	1135.1	1135.4	1135.8
1136.4	1137.1	1137.9	1138.9	1140.0	1140.4	1141.9	1143.0	1144.3	1145.6
1146.8	1148.3	1149.5	1151.1	1151.9	1152.2	1152.3	1152.3	1152.3	1152.3
1152.3	1152.2	1152.2	1152.2	1152.1	1152.1	1152.0	1152.0	1151.9	1151.8
1151.7	1151.5	1151.4	1151.2	1151.1	1151.0	1150.9	1150.8	1150.7	1150.6
1150.5	1150.5								

PEAK OUTFLOW IS 318. AT TIME 42.25 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	318.	206.	58.	29.	5620.
CMS	9.	6.	2.	1.	159.
INCHES		6.17	6.95	7.03	7.03
MM		156.66	176.52	178.49	178.48
AC-FT		102.	115.	116.	116.
THOUS CU M		126.	142.	143.	143.

WARNING *** TOP OF DAM, BOTTOM OF BREACH, OR LOW-LEVEL OUTLET IS NOT WITHIN RANGE OF GIVEN ELEVATIONS IN STORAGE-ELEVATION DATA
BOTTOM OF RESERVOIR ASSUMED TO BE AT 1125.00
STORAGE-ELEVATION DATA WILL BE EXTRAPOLATED ABOVE ELEVATION 1155.00

STATION 1, PLAN 1, RATIO 2

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	2.	2.	2.	3.	3.	3.	3.	4.
4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
4.	4.	4.	4.	4.	3.	3.	3.	3.	3.
3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
3.	3.	3.	3.	3.	2.	2.	2.	2.	2.
2.	2.	2.	3.	3.	3.	3.	4.	4.	4.
5.	5.	5.	6.	6.	7.	7.	8.	8.	8.
8.	9.	9.	9.	10.	10.	10.	11.	11.	11.
12.	12.	13.	13.	14.	14.	15.	81.	157.	292.
369.	414.	465.	514.	558.	594.	620.	634.	627.	625.
601.	573.	543.	509.	474.	437.	400.	364.	329.	296.
267.	240.	217.	195.	179.	172.	162.	151.	139.	127.
117.	106.								

STORAGE

4.	4.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	6.	6.	6.	6.	6.	6.
6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
7.	7.	8.	8.	9.	9.	10.	10.	11.	11.
12.	12.	13.	14.	14.	15.	16.	17.	18.	19.
21.	23.	25.	28.	31.	33.	40.	44.	47.	49.
50.	50.	50.	51.	51.	51.	52.	52.	52.	52.
51.	51.	51.	51.	51.	51.	50.	50.	49.	49.
49.	49.	48.	48.	48.	47.	47.	47.	46.	46.
45.	45.								

STAGE

1129.8	1129.8	1129.8	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9	1129.9
1129.9	1129.9	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0	1130.0
1130.0	1130.0	1130.0	1130.0	1130.0	1130.1	1130.1	1130.1	1130.1	1130.1
1130.1	1130.1	1130.1	1130.1	1130.1	1130.1	1130.1	1130.2	1130.2	1130.3
1130.4	1130.5	1130.6	1130.7	1130.9	1131.0	1131.1	1131.2	1131.3	1131.3
1131.4	1131.4	1131.5	1131.5	1131.5	1131.5	1131.5	1131.5	1131.5	1131.4

1130.7	1130.9	1130.9	1130.9	1130.9	1130.9	1130.9	1130.9	1130.8	1130.8
1130.8	1130.8	1130.9	1130.9	1130.9	1131.0	1131.1	1131.3	1131.5	1131.7
1132.0	1132.4	1132.8	1133.2	1133.6	1134.1	1134.6	1135.1	1135.5	1135.9
1136.3	1136.8	1137.2	1137.7	1138.1	1138.6	1139.2	1139.8	1140.4	1141.0
1141.6	1142.8	1143.9	1145.2	1146.5	1147.9	1149.5	1150.8	1151.7	1152.2
1152.4	1152.5	1152.6	1152.7	1152.8	1152.9	1153.0	1153.0	1153.0	1153.0
1152.9	1152.9	1152.8	1152.7	1152.6	1152.5	1152.5	1152.4	1152.3	1152.3
1152.2	1152.1	1152.1	1152.0	1152.0	1151.9	1151.8	1151.6	1151.5	1151.4
1151.2	1151.1								

PEAK OUTFLOW IS 637. AT TIME 42.25 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	637.	496.	134.	69.	12979.
CMS	18.	13.	4.	2.	368.
INCHES		13.66	16.08	16.23	16.23
MM		347.48	408.37	412.18	412.18
AC-FT		226.	266.	268.	268.
THOUS CU M		279.	328.	331.	331.

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIO 1	RATIO 2	RATIOS APPLIED TO FLOWS
				0.50	1.00	
HYDROGRAPH AT	1	0.31	1	319.	638.	
	(	0.00)	(	9.03)(	18.06)(	
ROUTED TO	1	0.31	1	318.	637.	
	(	0.00)	(	9.01)(	18.02)(	

SUMMARY OF DAM SAFETY ANALYSIS

PLAT 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1129.80	1129.80	1156.20
STORAGE	4.	4.	63.
OUTFLOW	0.	0.	3230.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
0.50	1152.30	0.	49.	318.	0.	42.25	0.
1.00	1152.99	0.	52.	697.	0.	42.25	0.

APPENDIX D

STABILITY COMPUTATIONS

B. Compacted Density: Standard Proctor compaction tests were made on the fraction passing the 3/4-inch sieve. The tests were made in accordance with ASTM Designation 698, Method C. The maximum densities obtained on the glacial till samples fell within the narrow limits of 122 p.c.f. to 123.5 p.c.f. The maximum density obtained on the lacustrine material was 113 p.c.f.

C. Shear Strength: A triaxial shear test was made on Sample 65W2074 to represent the borrow samples submitted. The test was made on the fraction passing the 3/4-inch sieve. The test specimen diameter was 4.0 inches. The test was made at a density of 100 percent of standard Proctor (ASTM - D698, Method C) at saturation.

The effective stress shear values obtained were $\bar{\phi} = 24.5°$, $\bar{c} = 800$ p.s.f. and the total stress shear values obtained were $\phi = 18°$, $c = 1100$ p.s.f. The test values are suggested for design.

SLOPE STABILITY

The stability of the proposed slopes was checked with a Swedish circle method of analysis. The foundation at the maximum section is bedrock; therefore, the analysis was limited to the embankment. A phreatic line from emergency spillway was assumed.

The proposed 3:1 upstream slope has a factor of safety of 2.3 for the draw-down case.

The proposed 2 1/2:1 downstream slope has a factor of safety of 1.62 for the no-drain condition.

A summary of the analysis is attached.

SETTLEMENT ANALYSIS

The glacial till mantle is logged as very dense. The consolidation potential of the till is expected to be low under the proposed fill height and the need for special design features is not indicated.

RECOMMENDATIONS

A. Site Preparation: Channel banks and trench slopes that are perpendicular to ℄ should be no steeper than 3:1.

B. Cutoff Trench: The cutoff trench should bottom in firm bedrock on the left abutment. Between the channels and on the right abutment a minimum trench depth of 6 feet is suggested.

SCS-355 (Rev. 4/59)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL MECHANICS LABORATORY

Sample Number 65W2074

TRIAXIAL SHEAR TEST DATA

Project Trout Creek 3-C Location New York

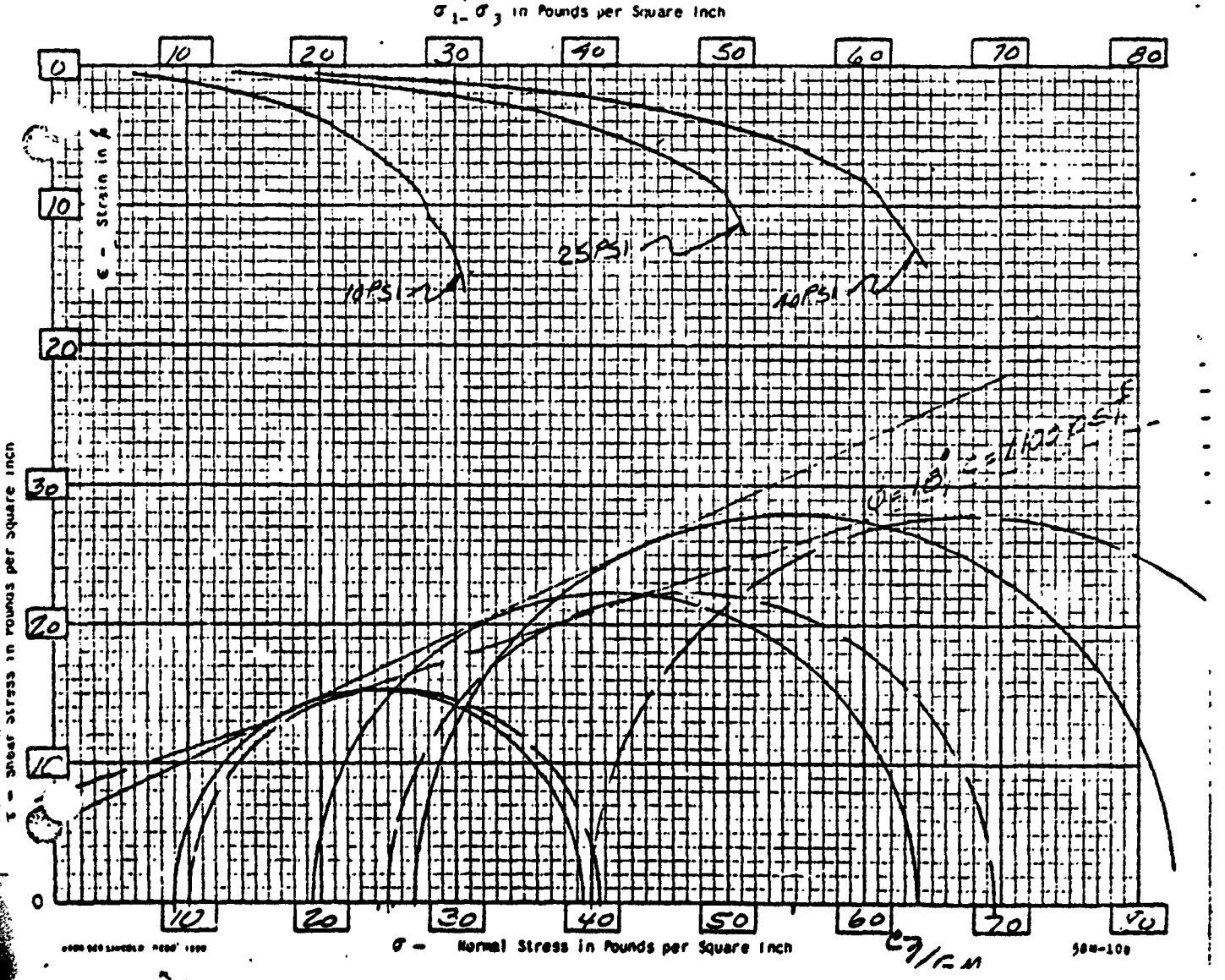
Moisture-Density Data
Standard ☒ Max. γ 123.5 pcf
Modified ☐ Optimum Moisture 10.0 %
Curve No. 4 of 4

L.L. 27 P.I. 10 Class CL G_s 2.76
% Finer Than: 0.002mm 12 0.005mm 13 #200 57
Other Factors Affecting Shear:
% Dispersion 13 % Salt ____
Other: ____

Specifications:
Specimen: Max. Height ____ Size < 3/4 " Diameter 4.0" Material
☒ Consolidated ☐ Drained ☐ Unconsolidated ☒ Undrained
PORE PRESSURE MEASURED
☐ Undisturbed and Tested at: ☐ Natural Moisture ☐ Saturation
☒ Remolded and Tested at: 100 % of ☒ Standard ☐ Modified with w= ____ % which is
☐ Lower than Optimum ☐ Optimum ☐ Higher than Optimum ☐ Saturated

Test Data

Dry Density γ pcf	% Max. Dry Den.	Moisture Content Start %	Moisture Content % Sat. Start	Moisture Content End %	Lateral Pressure σ_3 δ_3	Consolidation Data Orig. e_0	Consolidation Data Final e_f	Stress at Failure $\sigma_1 - \sigma_3$	% Strain at Failure ε	Internal Friction ϕ Tan ϕ	Unit Cohesion $\overline{C}$
123.6	100.1	13.6	95.1	13.0	10 8.9	.3937	.3731	30.6	15	$\overline{\phi}$ 24.5°	5.6 psi
124.2	100.5	13.3	95.0	12.4	25 19.4	.3870	.3596	44.4	6		6.0 psf
123.0	99.6	14.0	96.5	12.5	40 26.9	.4009	.3530	55.5	6	Tan ϕ	



Sheet 1 of ~ Maximum Section

FORM SCS-357
10-58 .

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL MECHANICS LABORATORY

SUMMARY - SLOPE STABILITY ANALYSIS

State NEW YORK Project TROUT BROOK SITE #3-C

Date 3-10-65 Analysis Made By G.L.H. Checked By P.B.C.

Method of Analysis SWEDISH CIRCLE

Location of Material					Fan 100% Sat'd Cl.					
Sample No.					65W2074					
γ_d					122.0					
γ_m					140.0					
γ_s					145.0					
γ_b					82.5					
Condition	Opt.	Sat.	Opt.	Sat.	Opt.	Sat.	Opt.	Sat.	Opt.	Sat.
ϕ						24.5°				
Tan ϕ						0.456				
K										
C						800				

UPSTREAM SLOPE

Trial	Slope	Conditions	Fs
4	3:1	Full drawdown - 10' berm @ elev 1129.8 - Arc cut from app. shldr thru emb of (24.5°-800) only.	2.3
		Note: Sat shear values on all trials.	

DOWNSTREAM SLOPE

Trial	Slope	Conditions	Fs
1	2½:1	No drain - No berm - Arc cut from app. shldr thru emb (24.5°-800) only.	1.72
1A	2½:1	Same as #1 except drain @ 4½ = 0.6.	1.81
2	2½:1	No drain - No berm - Arc cut from app shldr. thru emb (24.5°-800) only.	1.62
3	2½:1	No drain - No berm - Arc cut from app. shldr. thru emb (24.5°-800) only.	1.67

Sheet 2 of 2

(SCS-357)

Supplement to sheet 1 of 2

Trout Brook Site #2-C

New York

APPENDIX E

REFERENCES

APPENDIX E

REFERENCES

1) U.S. Department of Commerce; Weather Bureau; Hydrometeorological Report No. 33 - Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1,000 Square Miles and Durations of 6, 12, 24, and 48 Hours, April 1956.

2) H.W. King and E.F. Brater, Handbook of Hydraulics, 5th edition, McGraw-Hill, 1963.

3) University of the State of New York, Geology of New York, Education Leaflet 20, Reprinted 1973.

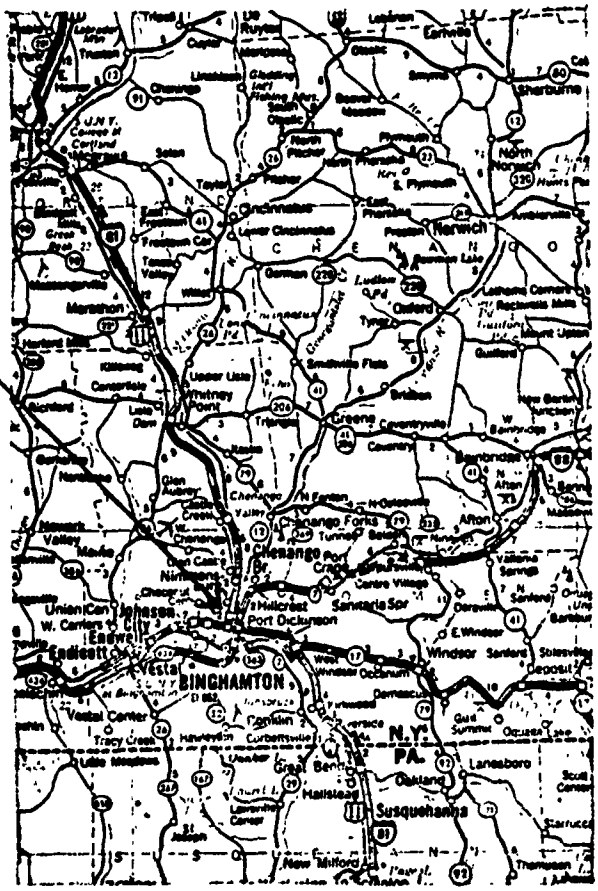
4) Elwyn E. Seelye, Design, 3rd edition, John Wiley and Sons, Inc., 1960.

5) U.S. Department of the Interior, Bureau of Reclamations; Design of Small Dams, 2nd edition (rev. reprint), 1977.

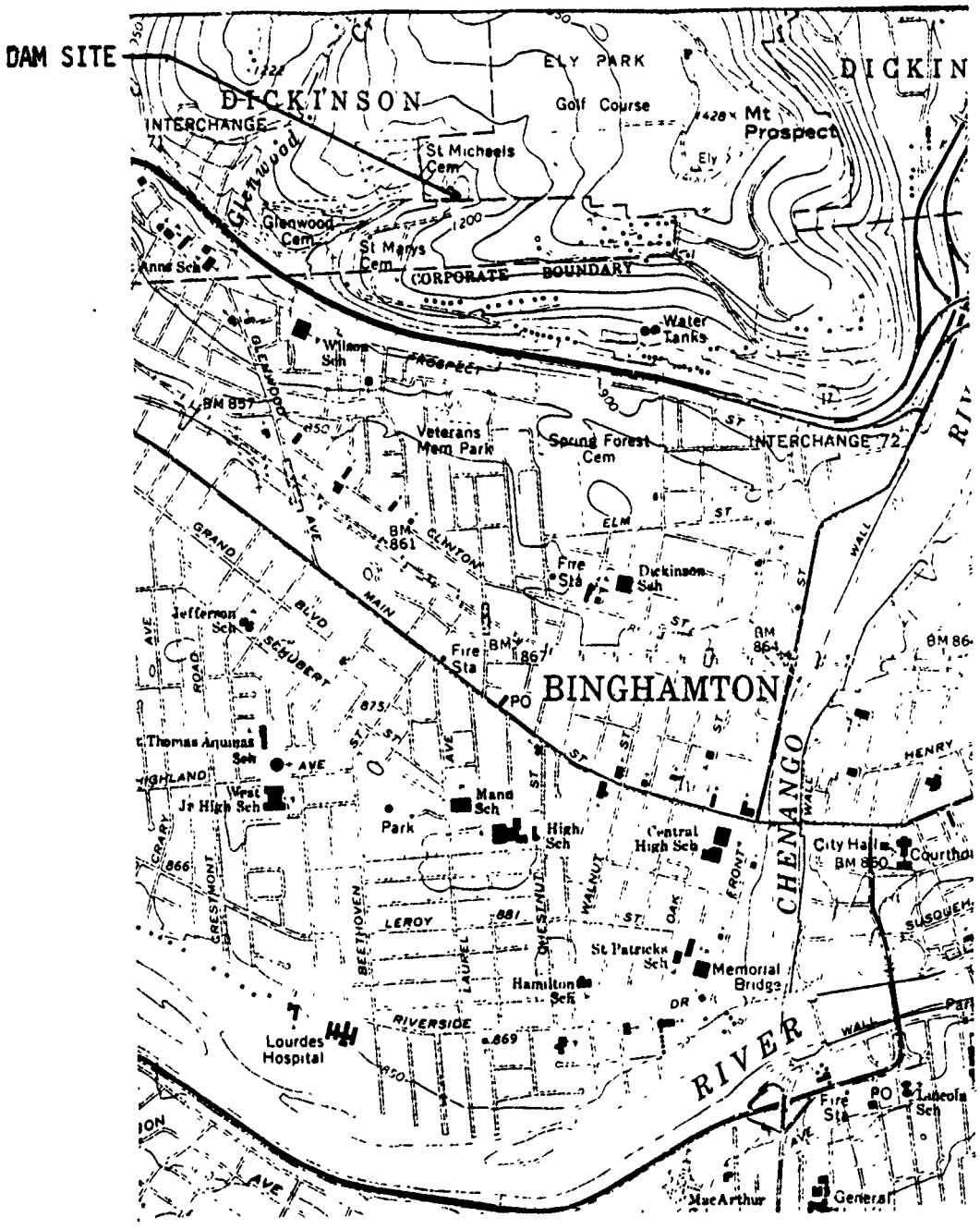
APPENDIX F

DRAWINGS

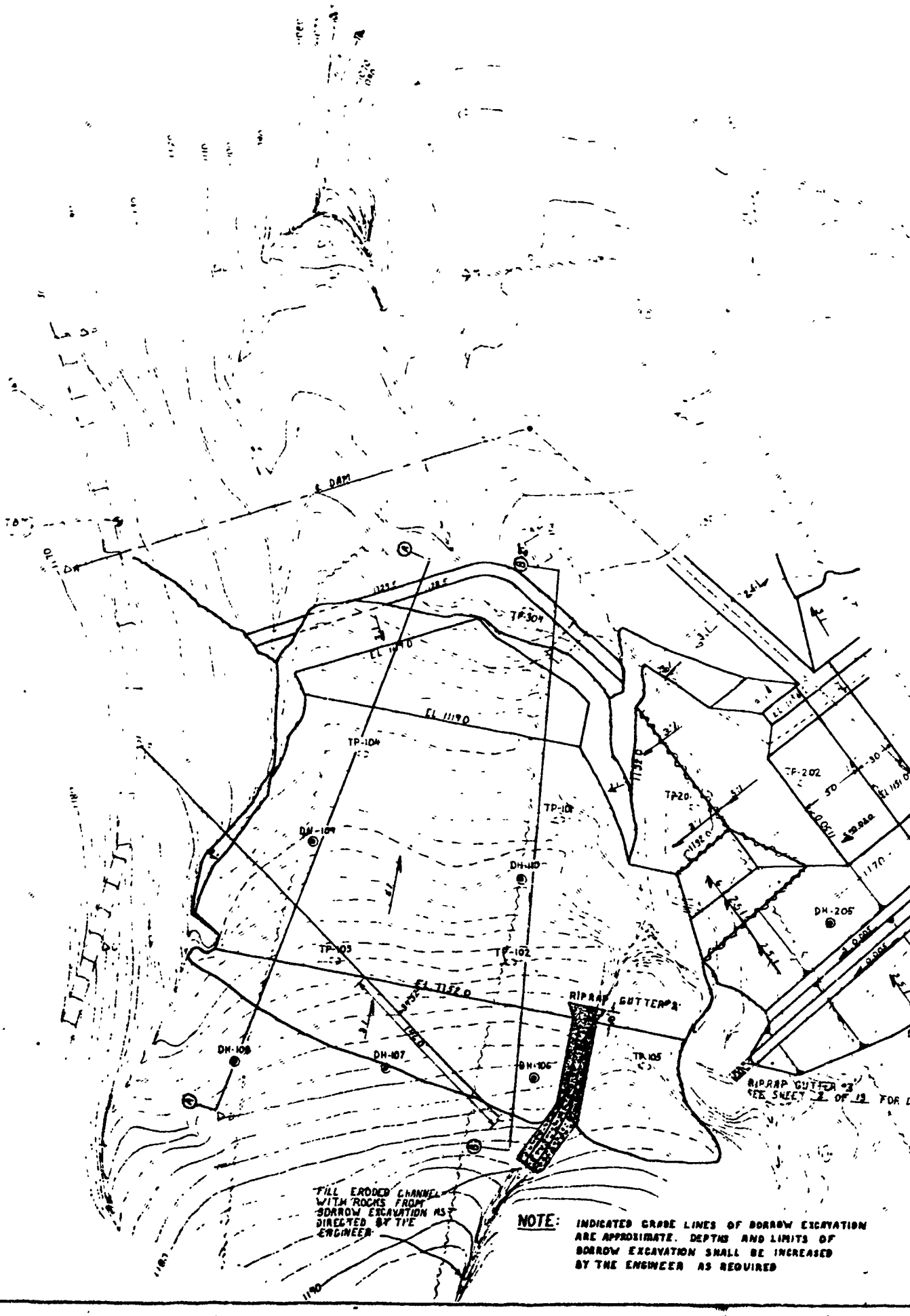
DAM SITE

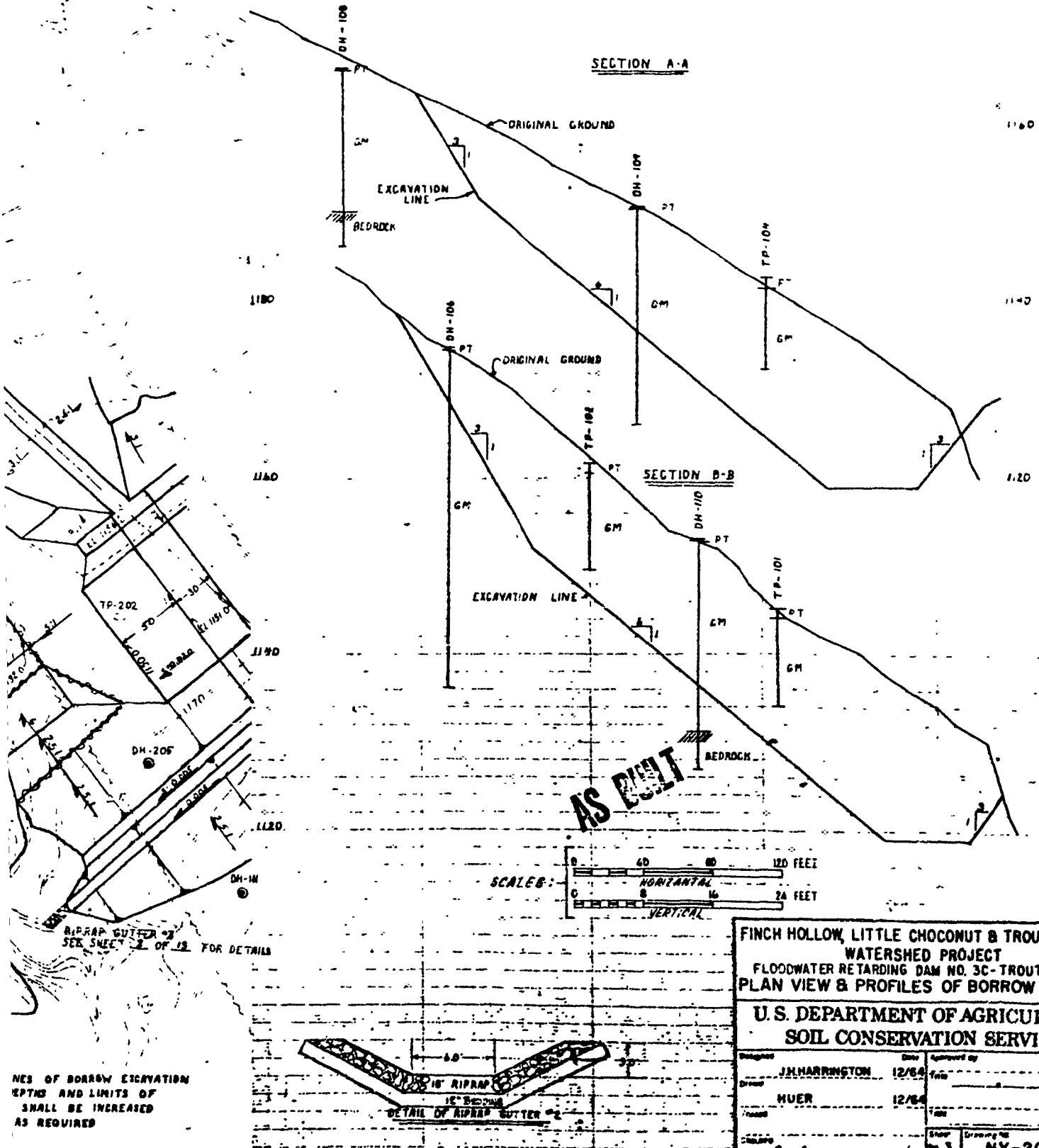


VICINITY MAP
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724



TOPOGRAPHIC MAP
FINCH HOLLOW WATERSHED PROJECT
SITE 3C
I.D. No. NY 724


DAM
TP-104
TP-103
TP-102
TP-101
TP-202
TP-105
DH-104
DH-103
DH-107
DH-106
DH-205
EL 1119.0
EL 1152.0
RIPRAP GUTTER #2
RIPRAP GUTTER #3
FILL ERODED CHANNEL WITH ROCKS FROM BORROW EXCAVATION AS DIRECTED BY THE ENGINEER
NOTE: INDICATED GRADE LINES OF BORROW EXCAVATION ARE APPROXIMATE. DEPTHS AND LIMITS OF BORROW EXCAVATION SHALL BE INCREASED BY THE ENGINEER AS REQUIRED



NES OF BORROW EXCAVATION
EPTHS AND LIMITS OF
SHALL BE INCREASED
AS REQUIRED

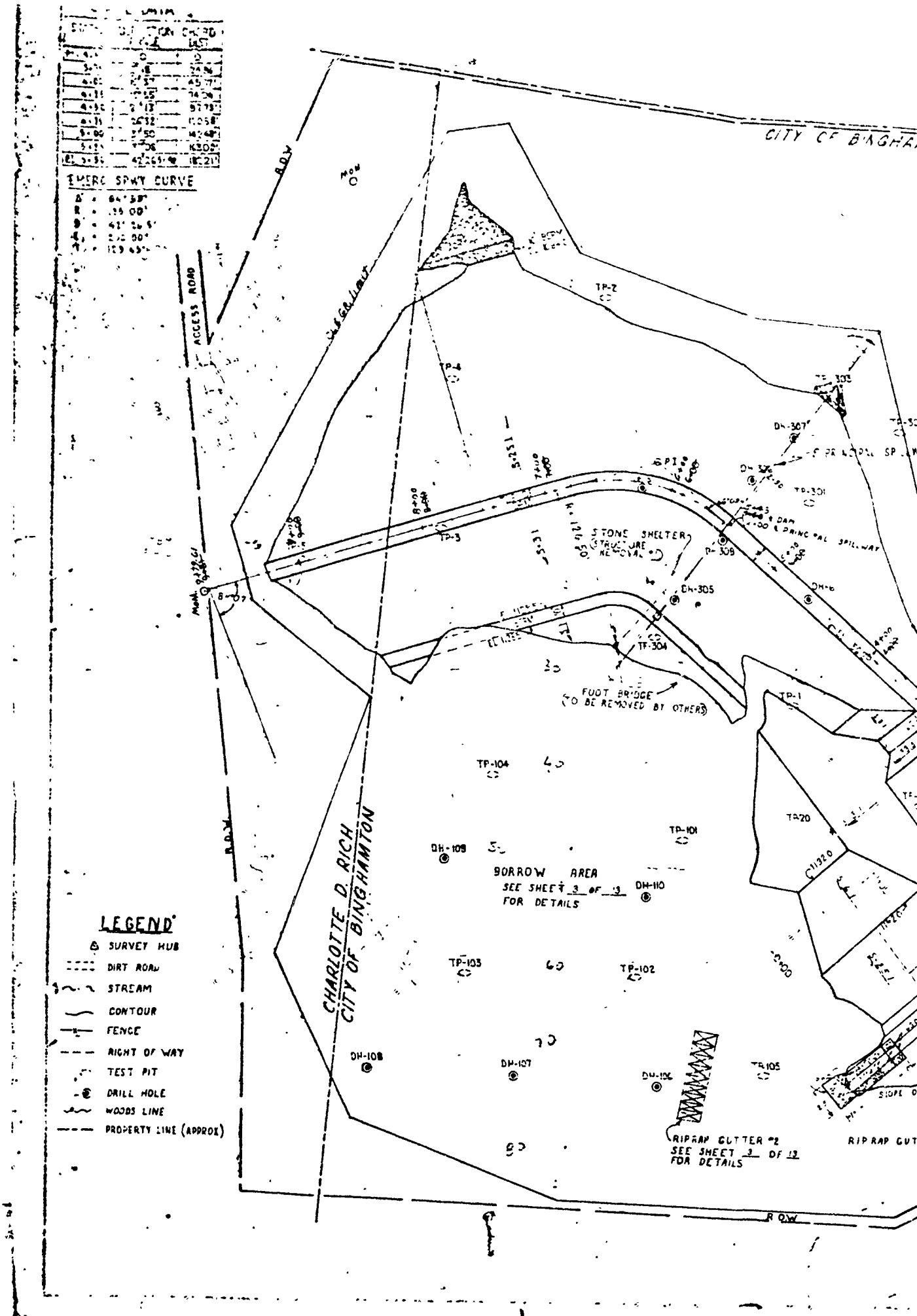
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 3C-TROUT BROOK
PLAN VIEW & PROFILES OF BORROW AREA

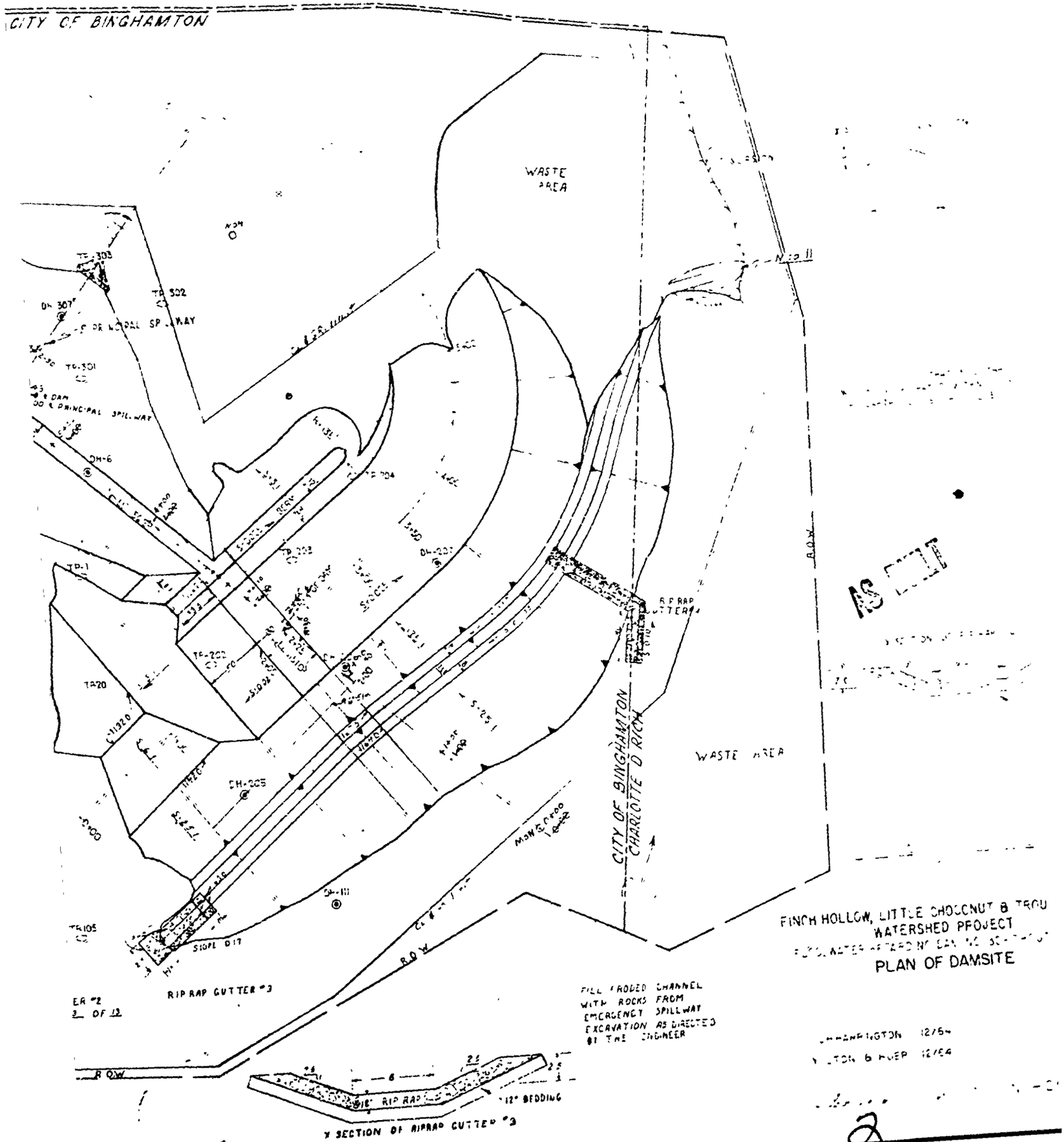
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	J.H.HARRINGTON	12/64	Approved by
Drawn	HUER	12/64	Title
Traced			Date
Checked		1/65	Sheet No. 3 of 13

Drawing No. NY-2020-F

2


EMERG SPWY CURVE
LEGEND
SURVEY HUB
DIRT ROAD
STREAM
CONTOUR
FENCE
RIGHT OF WAY
TEST PIT
DRILL HOLE
WOODS LINE
PROPERTY LINE (APPROX)
ACCESS ROAD
CHARLOTTE D. RICH
CITY OF BINGHAMTON
STONE SHELTER
STRUCTURE REMOVAL
FOOT BRIDGE
TO BE REMOVED BY OTHERS
BORROW AREA
SEE SHEET 3 OF 13
FOR DETAILS
RIPRAP GUTTER #2
SEE SHEET 3 OF 13
FOR DETAILS
R.O.W.
TP-1
TP-2
TP-3
TP-4
TP-101
TP-102
TP-103
TP-104
TP-105
TP-301
TP-304
DH-305
DH-307
DH-308
DH-309
DH-110
DH-109
DH-108
DH-107
DH-106
TP20

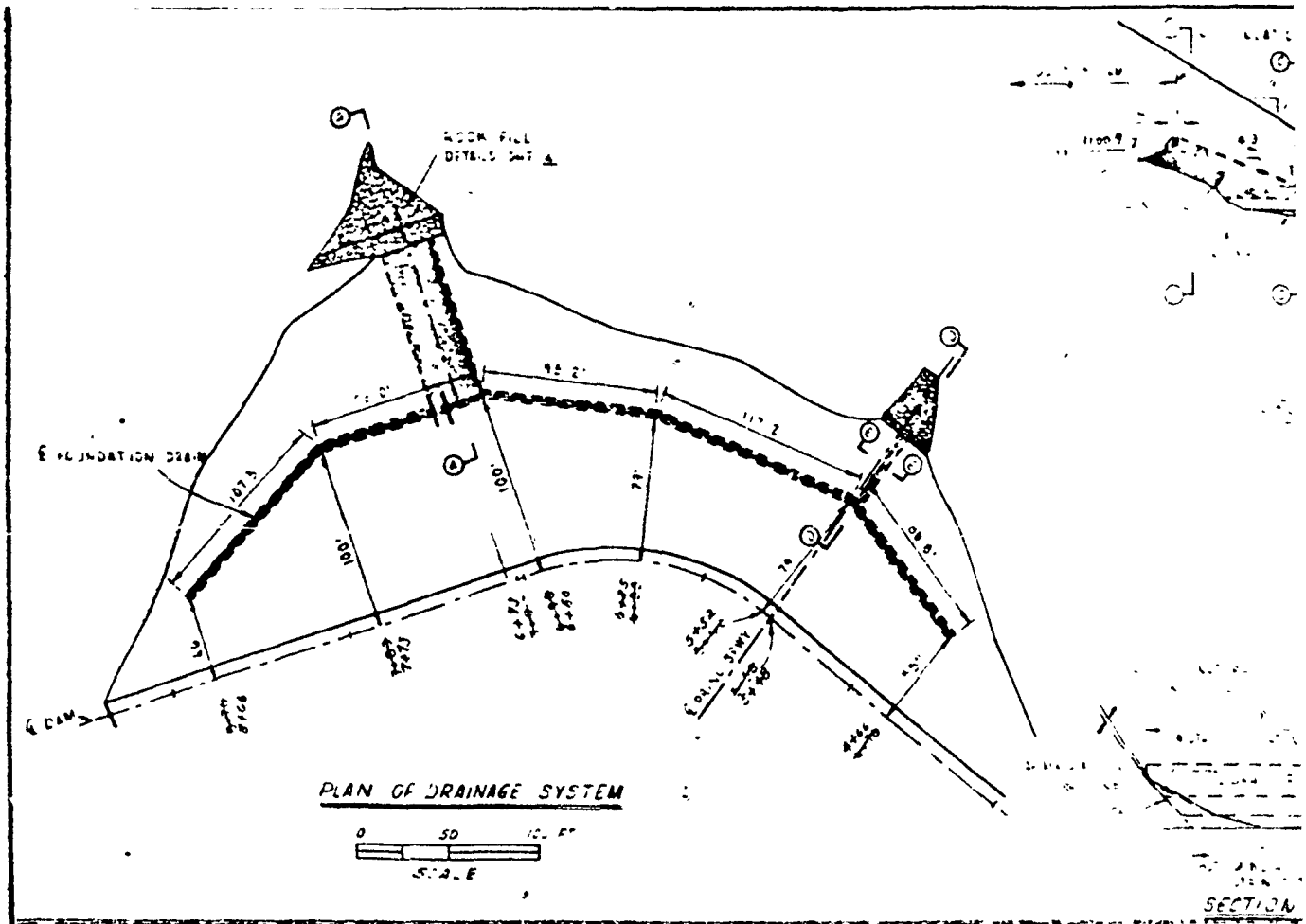


FINCH HOLLOW, LITTLE CHOCONUT & TROU
WATERSHED PROJECT

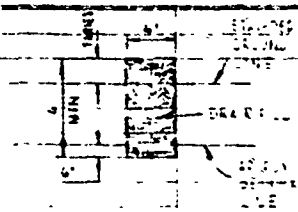
PLAN OF DAMSITE

ER #2
3 OF 12

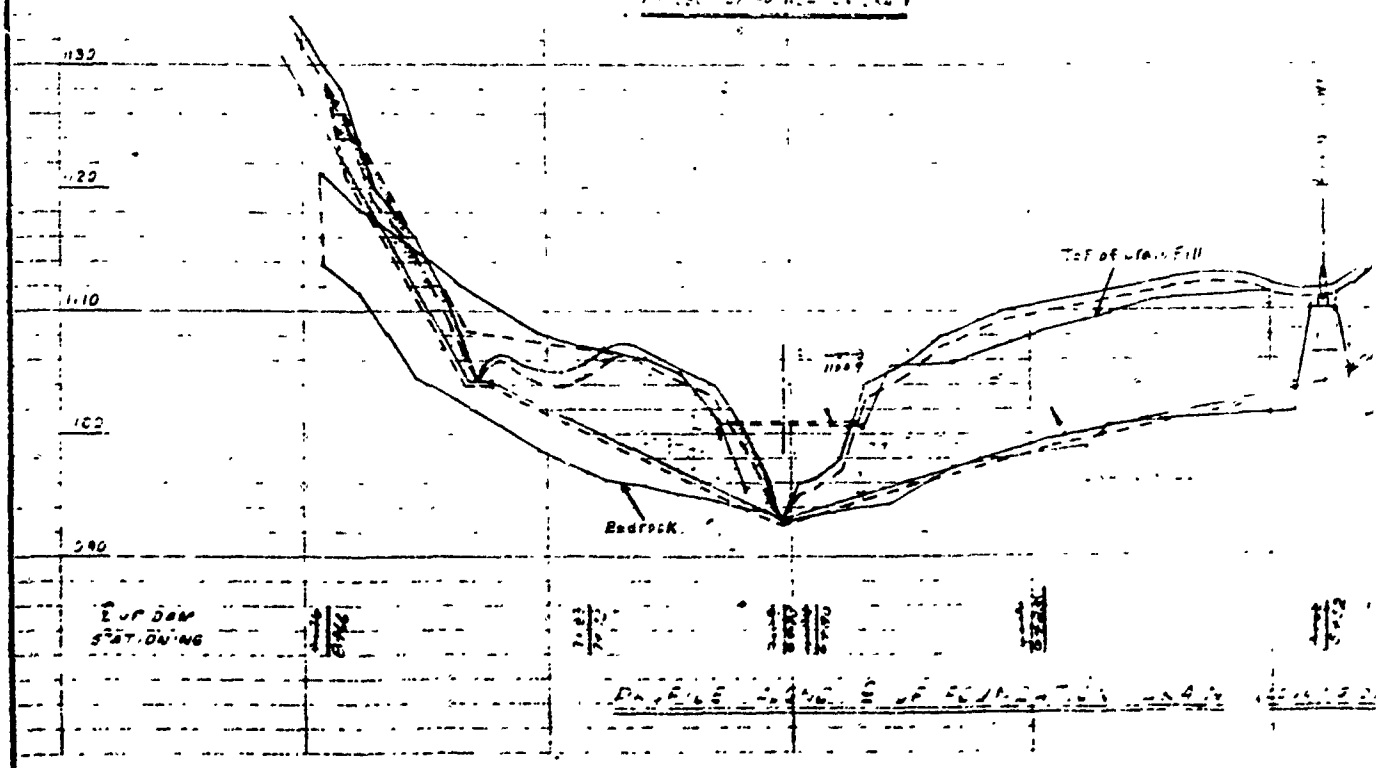
2

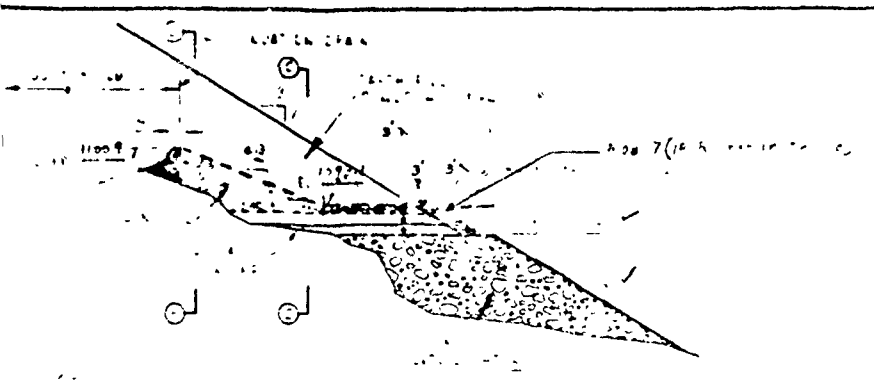


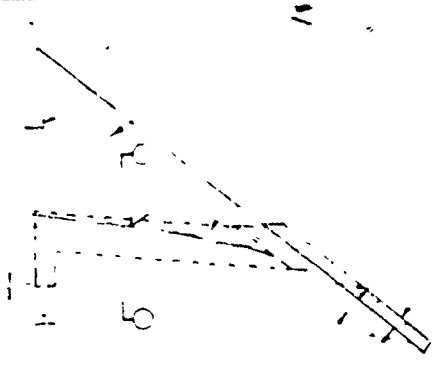
SECTION

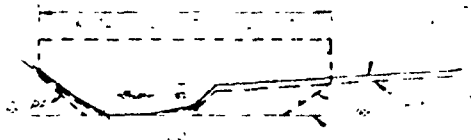


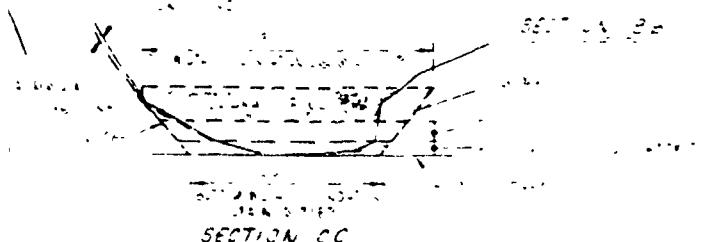
TYP SECT OF CO ROAD ON DS 4



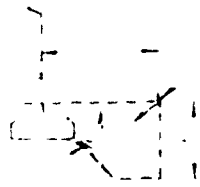


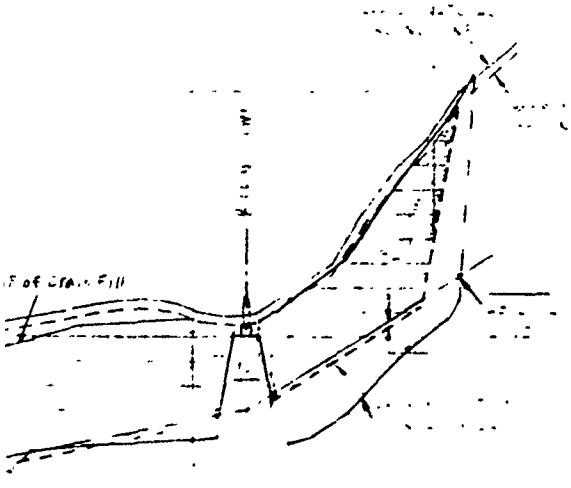


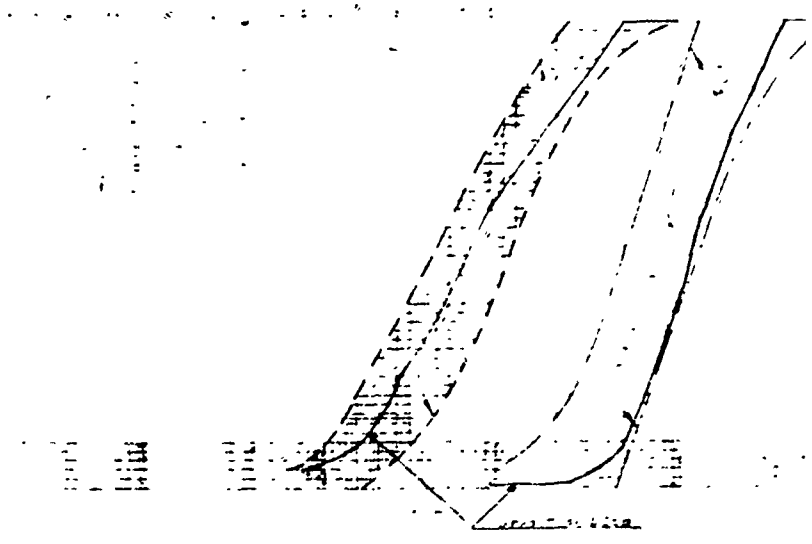




SECTION CC

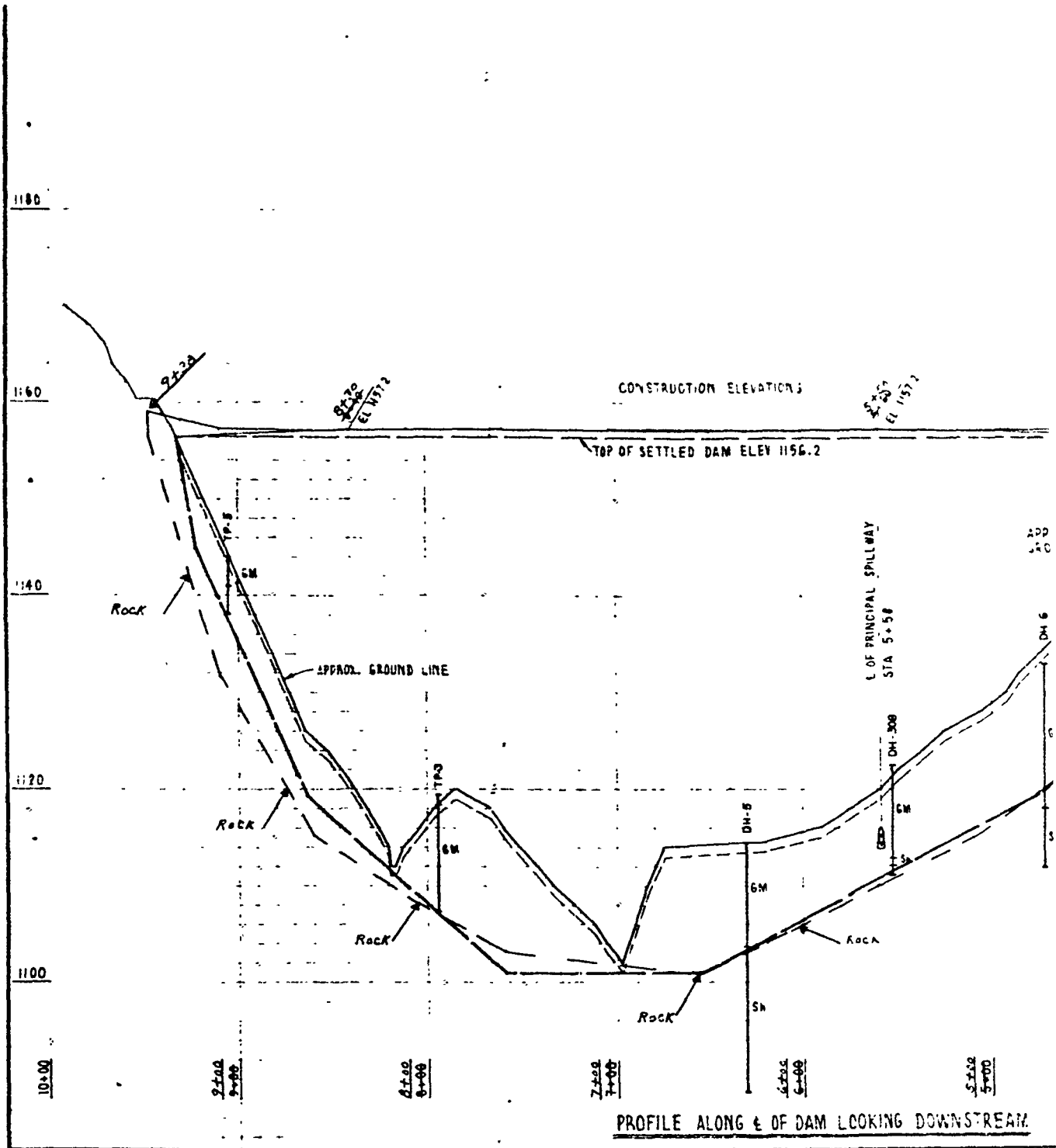




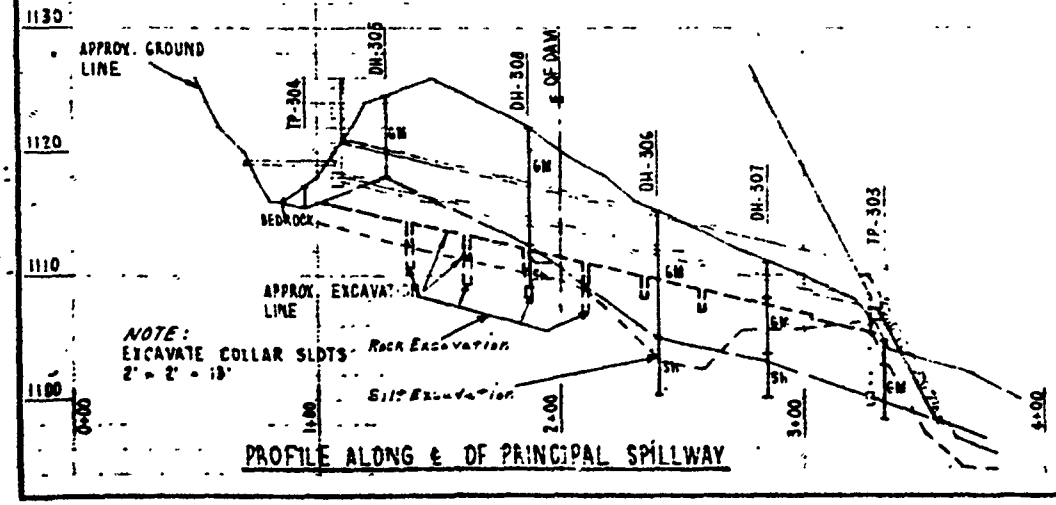


FINCH HOLLOW, LITTLE CHOCONUT & TROUT E
WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 20, TROUT BR
DRAINAGE DETAILS
U. S. DEPARTMENT OF AGRICULTU
SOIL CONSERVATION SERVICE

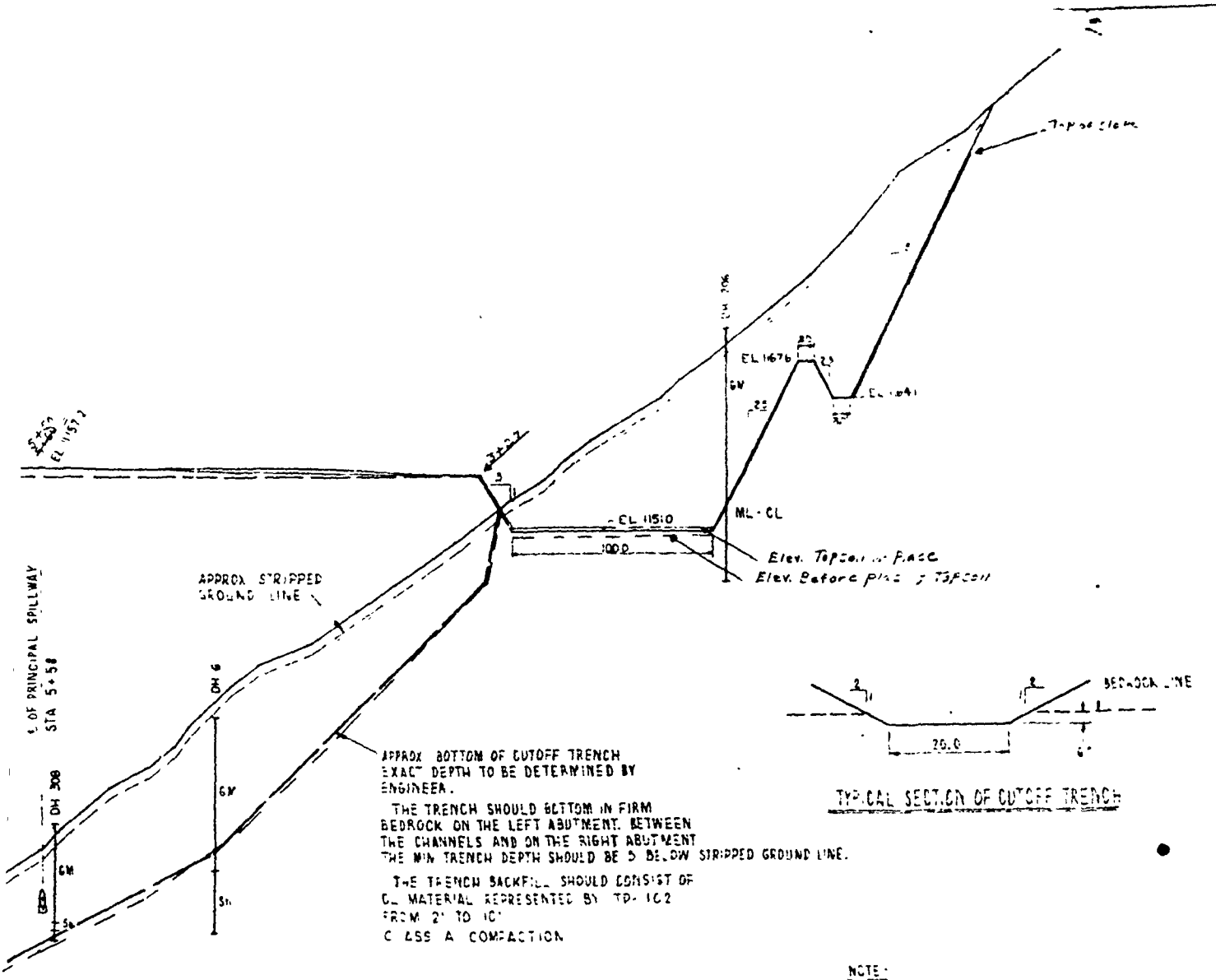
NY - 20



PROFILE ALONG ℄ OF DAM LOOKING DOWNSTREAM



PROFILE ALONG ℄ OF PRINCIPAL SPILLWAY



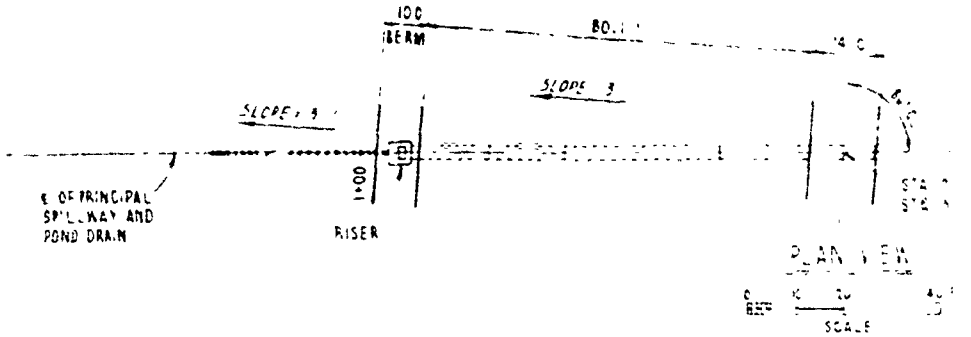
TYPICAL SECTION OF PRINCIPAL SPILLWAY EXCAVATION

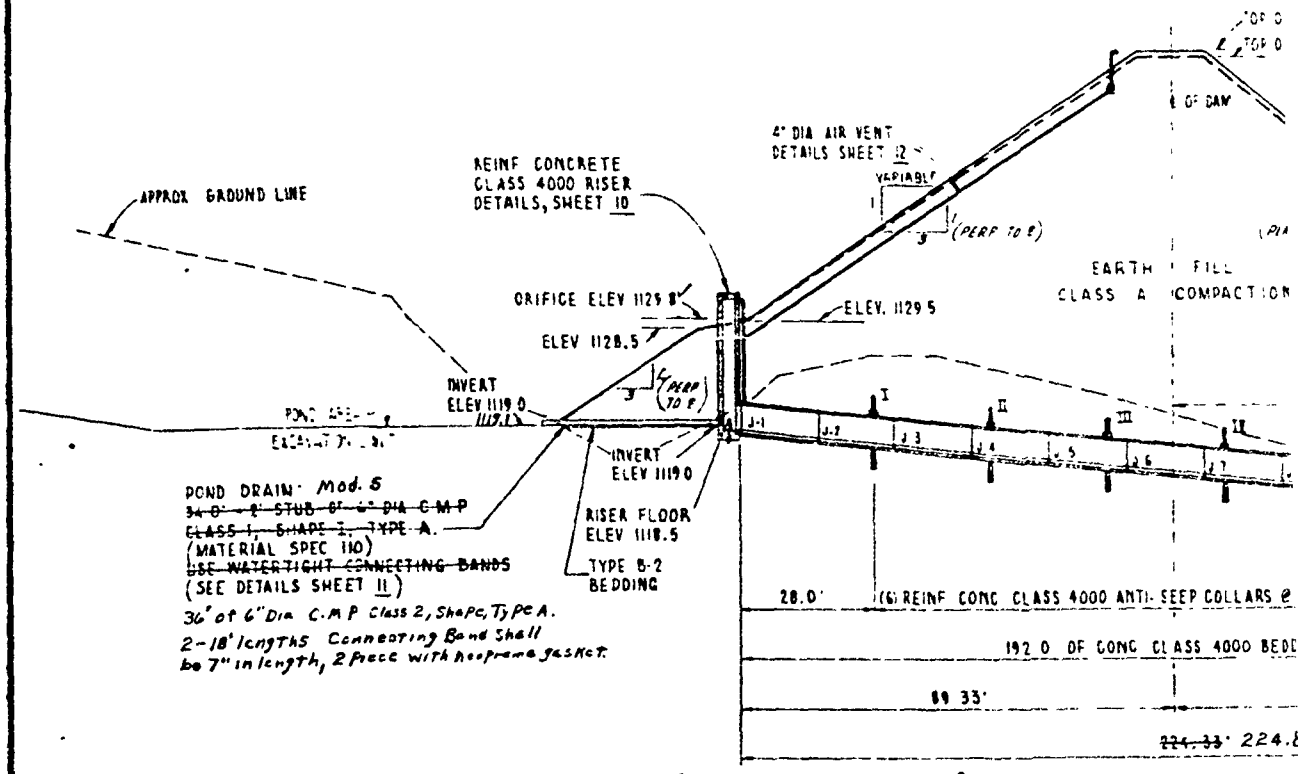
FINCH HOLLOW, LITTLE CHOCONUT & TROUT WATERSHED PROJECT
FLOOD WATER-RETARDING DAM NO. 3C - TROUT
PROFILES

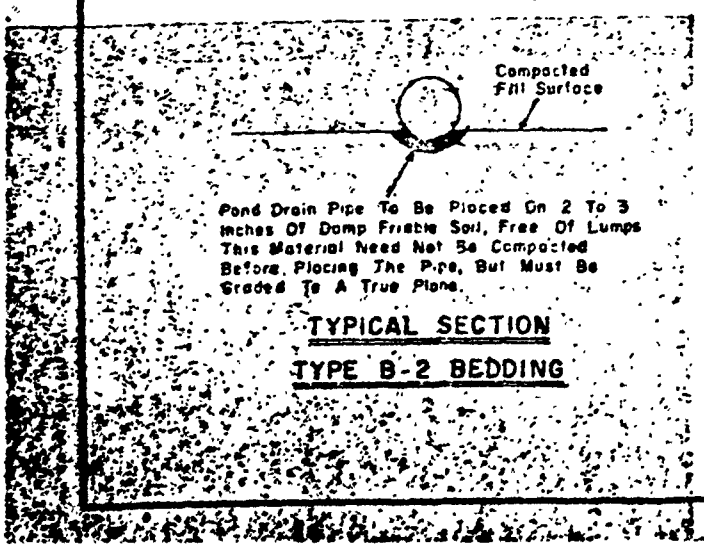
U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

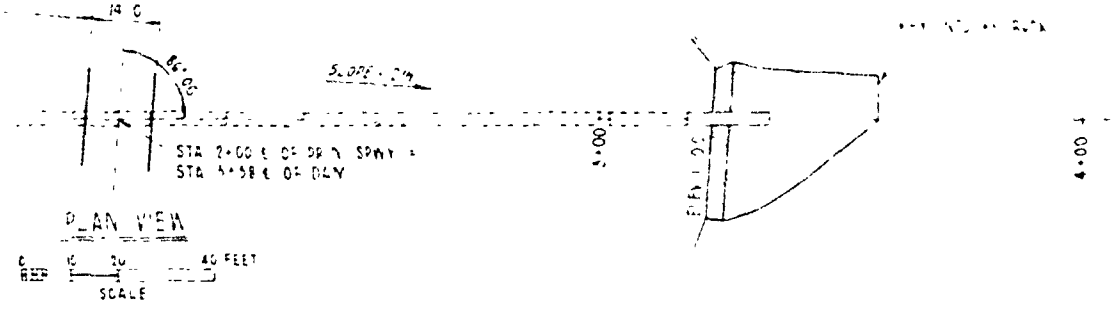
J H HARRINGTON	12/64	
D ANGELO	12/64	

NY-20


100
BERM
SLOPE
SLOPE
℄ OF PRINCIPAL SPILLWAY AND POND DRAIN
RISER
PLAN VIEW
SCALE


APPROX GROUND LINE
REINF CONCRETE CLASS 4000 RISER DETAILS, SHEET 10
4" DIA AIR VENT DETAILS SHEET 12
VARIABLE
(PERF TO ℄)
℄ OF DAM
EARTH FILL
CLASS A COMPACTION
ORIFICE ELEV 1129.8
ELEV 1128.5
ELEV. 1129.5
INVERT ELEV 1119.0
POND DRAIN Mod. 5
~~36'-0" ℄ STUB OF 6" DIA C.M.P CLASS 1, SHAPE 1, TYPE A.~~
(MATERIAL SPEC 110)
~~USE WATERTIGHT CONNECTING BANDS~~
(SEE DETAILS SHEET 11)
36' of 6" Dia C.M.P Class 2, Shape, Type A.
2-18' lengths Connecting Band Shall be 7" in length, 2 piece with neoprene gasket
INVERT ELEV 1119.0
RISER FLOOR ELEV 1118.5
TYPE B-2 BEDDING
28.0'
(6) REINF CONC CLASS 4000 ANTI-SEEP COLLARS @
192.0 OF CONC CLASS 4000 BEDD
89.33'
~~224.33'~~ 224.
PROFILE ALONG ℄ OF PR
HORI. SCALE

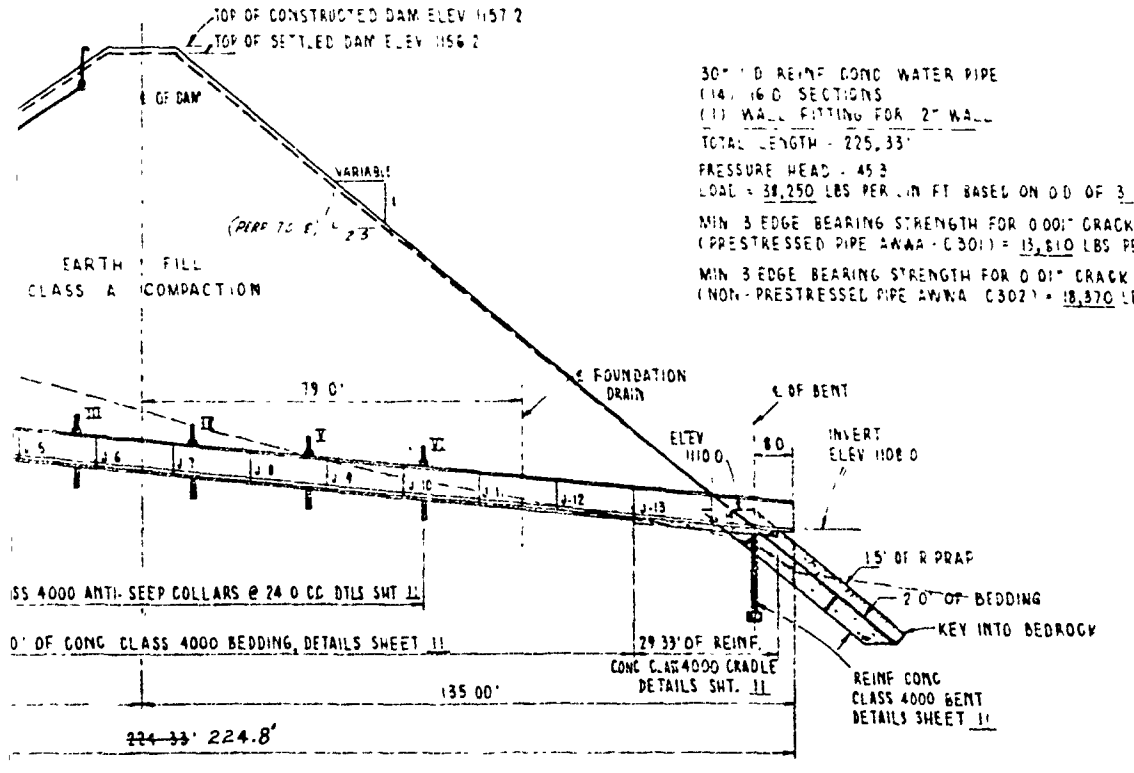

Compacted Fill Surface
Pond Drain Pipe To Be Placed On 2 To 3 Inches Of Damp Friable Soil, Free Of Lumps This Material Need Not Be Compacted Before Placing The Pipe, But Must Be Graded To A True Plane.
TYPICAL SECTION
TYPE B-2 BEDDING



COLLAR	DISTANCE FROM WALL FITTING	INVERT EL OF 30" DIA
I	0	
II	16	
III	32	
IV	48	
V	64	
VI	80	
VII	96	
VIII	112	
IX	128	
X	144	
OUTLET	224	

NOTE
ABOVE DIMENSIONS FOR LE
PIPE ARE BASED ON NOMINAL LE
AND DO NOT INCLUDE SPIGOT

COLLAR	DISTANCE FROM WALL FITTING	INVERT EL OF 30" DIA
I	28	
II	52	
III	76	
IV	100	
V	124	
VI	148	



30" ϕ REINF CONC WATER PIPE
(14) 16 0 SECTIONS
(1) WALL FITTING FOR 2" WALL
TOTAL LENGTH - 225.33'
PRESSURE HEAD - 45 3
LOAD = 38,250 LBS PER LIN FT BASED ON OD OF 3 23
MIN 3 EDGE BEARING STRENGTH FOR 0 001" CRACK
(PRESTRESSED PIPE AWWA - C301) = 13,810 LBS PER LIN FT
MIN 3 EDGE BEARING STRENGTH FOR 0 01" CRACK
(NON-PRESTRESSED PIPE AWWA C302) = 18,370 LBS PER LIN FT

PIPE SUPPLIERS NOTE
CAST OUTSIDE OF SPIGOT JOIN
WITH CONCRETE ON ONE SECTION

AS BUILT

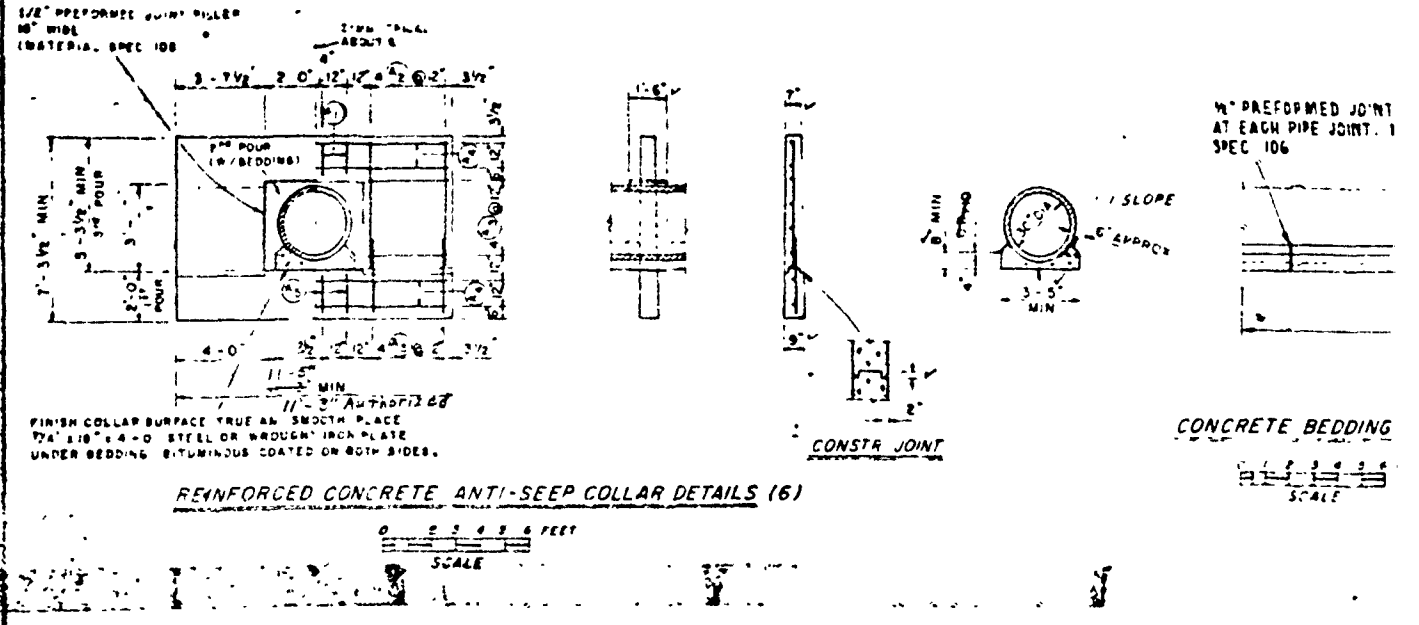
RIPRAP NOTE
HANDPLACED LOOSE RIPRAP SHALL BE WELL GRADED FROM A MIN SIZE OF 3" TO A MAX SIZE OF 24"

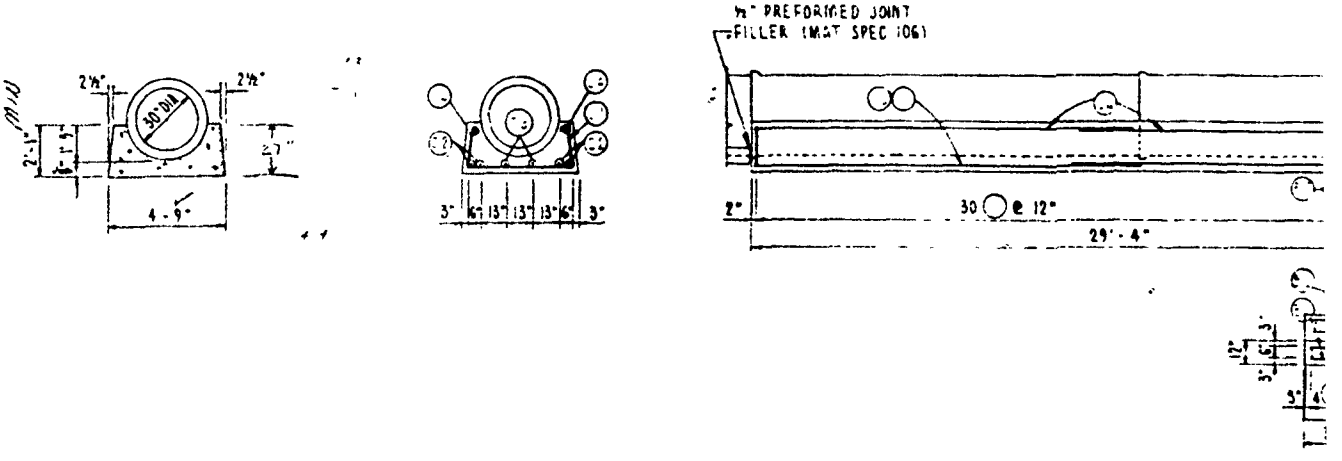
OFILE ALONG ℄ OF PRINCIPAL SPILLWAY

10 20 40 FT
HORI. SCALE
0 5 10 20 FT.
VERT. SCALE

FINCH HOLLOW, LITTLE CHOCONUT & TRO
WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 3C-TROU
PLAN-PROFILE OF PRINCIPAL SP
U.S DEPARTMENT OF AGRICU
SOIL CONSERVATION SERV

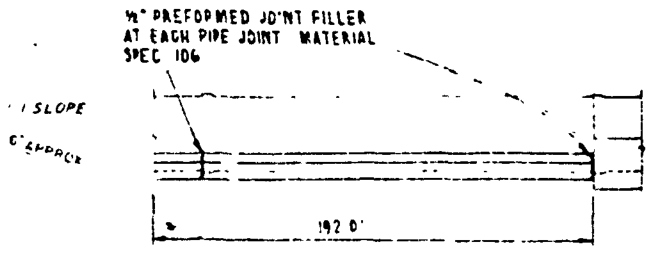
Designed	Date	Approved by
Lew Beck	5/65	Title
Drawn		
W.H. MORGAN	MAY '65	Title
Traced		
Checked		Sheet No. 9 of 13
Bud Germann	5/65	NY-





REINFORCED CONCRETE CRADLE AND BENT DETAILS

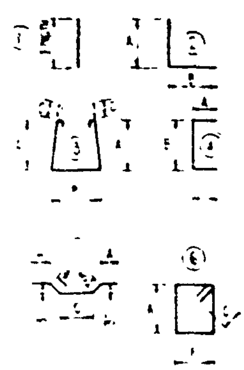
0 1 2 3 4 5 6 FEET
SCALE



CONCRETE BEDDING DETAILS

SCALE

BAR TYPES



STEEL SCHEDULE

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

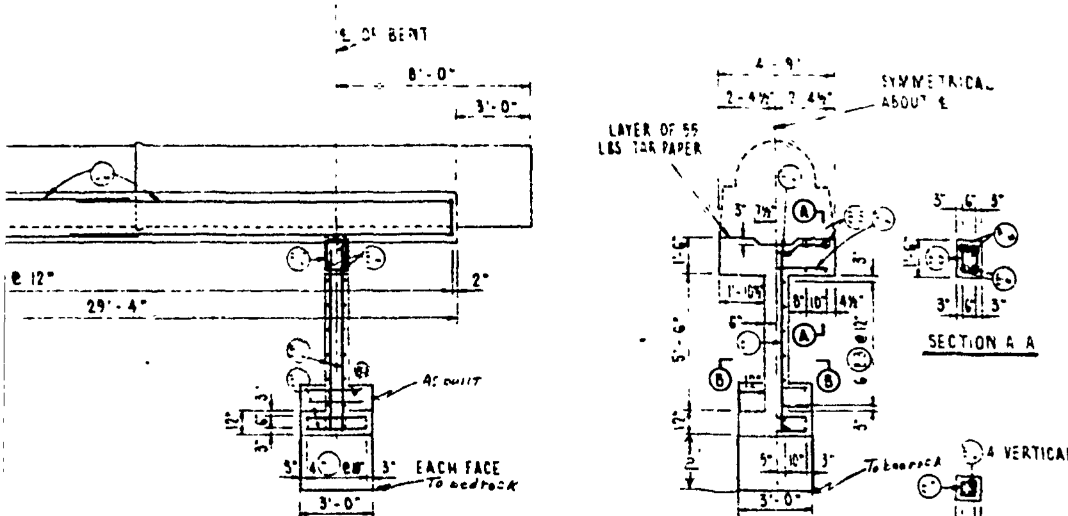
TOTAL QUANTITIES FOR PROJECT

REINFORCING STEEL

NO. 2 BARS	[illegible]	LIN FT	[illegible]	LBS
NO. 4 BARS	[illegible]	LIN. FT	[illegible]	LBS
NO. 5 BARS	[illegible]	LIN. FT.	[illegible]	LBS
NO. 6 BARS	[illegible]	LIN FT	[illegible]	LBS
NO. 7 BARS	[illegible]	LIN. FT	[illegible]	LBS
NO. 9 BARS	[illegible]	LIN FT	[illegible]	LBS
		TOTAL	[illegible]	LBS

CONCRETE

CLASS 4000, REINFORCED 27.8 CU YDS
CLASS 4000, NON-REINFORCED 14.1 CU YDS



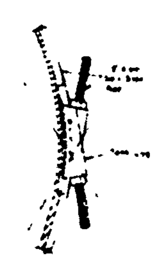
AND BENT DETAILS

FEET

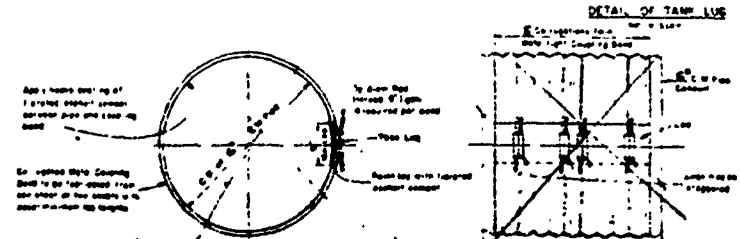
GENERAL NOTES

1. [illegible] STEEL PLACED IN CONCRETE [illegible] AGAINST THE GROUND SHALL HAVE A MINIMUM [illegible] CLEAR COVER. WHERE FORMS ARE USED, REINFORCING STEEL SHALL HAVE A MINIMUM OF [illegible] CLEAR COVER.
2. ALL EXPOSED EDGES OF CONCRETE TO HAVE A ¾" CHAMFER UNLESS OTHERWISE NOTED.
3. PORTLAND CEMENT TYPE I WITH AN AIR-ENTRAINING ADMIXTURE OR TYPE IA SHALL BE USED

AS BUILT



DETAIL OF TAMP LUG



Delete

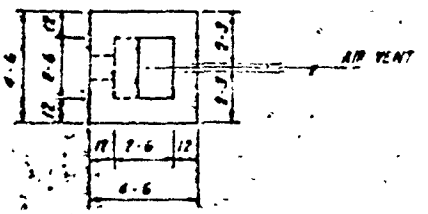
DETAILS OF WATERTIGHT COUPLING BAND

FINCH HOLLOW, LITTLE CHOCONUT & TROUT B[illegible]
WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 3C - TROUT B[illegible]
CRADLE, COLLAR, BENT AND STEEL SCHE[illegible]

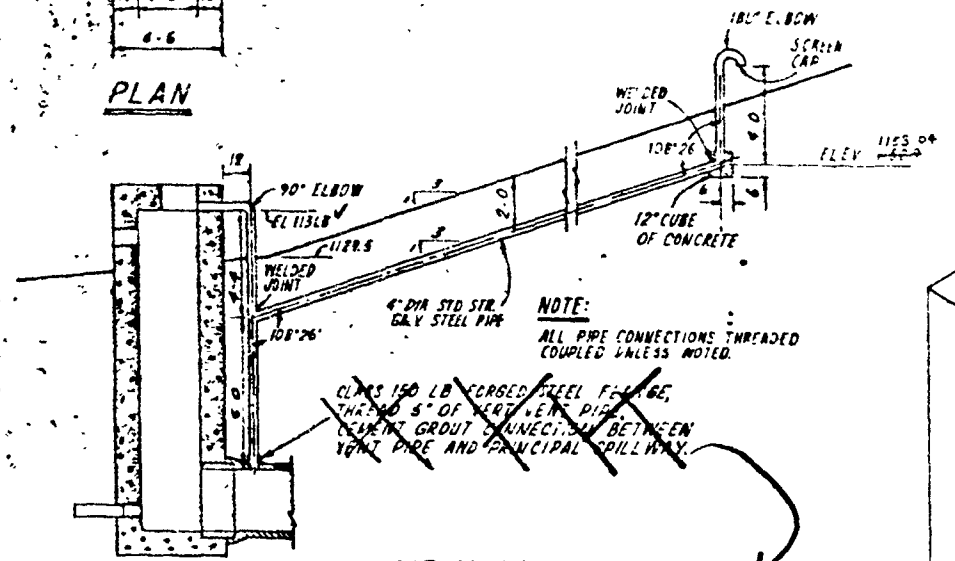
U.S. DEPARTMENT OF AGRICULT[illegible]
SOIL CONSERVATION SERVICE

Designed L. R. BECK	Date May 65	Approved by
Drawn W. H. MORGAN	MAY 65	Title
Traced		Title
Checked Ben Gurmona	5/65	Sheet No. 11 of 13 — Drawing No. NY-202

2



PLAN



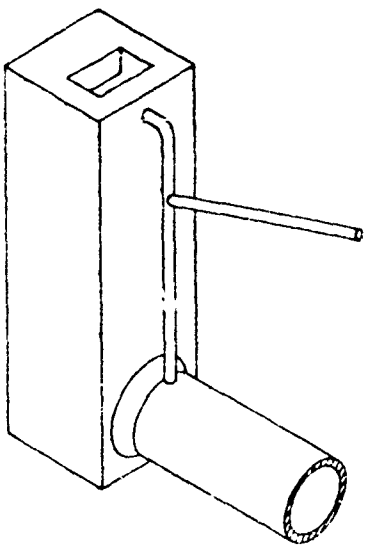
SECTION ON ℄

AIR VENT DETAILS

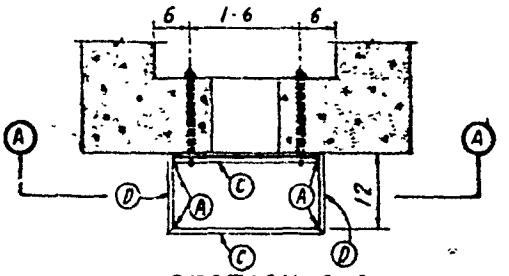
See Drawing No. E-4-1892 Mod. No. 1

NOTE:

~~HOLE WILL BE DRILLED THROUGH CONCRETE PRESSURE PIPE AFTER THE PIPE HAS BEEN LAID IN PLACE. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND UNDER THE DIRECT SUPERVISION OF THE MANUFACTURERS REPRESENTATIVE.~~

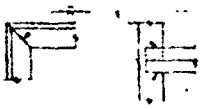


ISOMETRIC

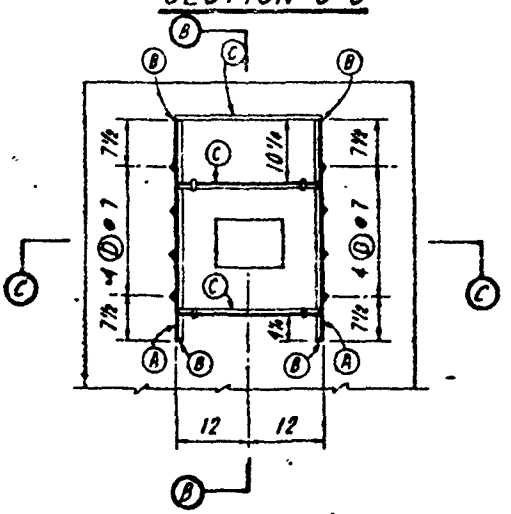


SECTION C-C

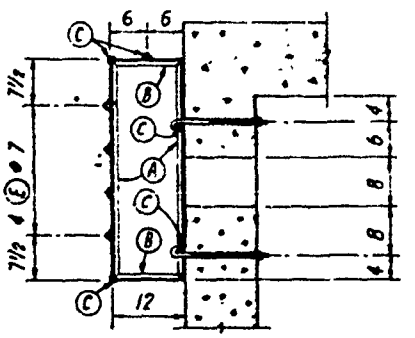
NOTE:
ALL POINTS OF CONTACT BETWEEN ANGLE IRON TO BE WELDED



WELDING DETAILS



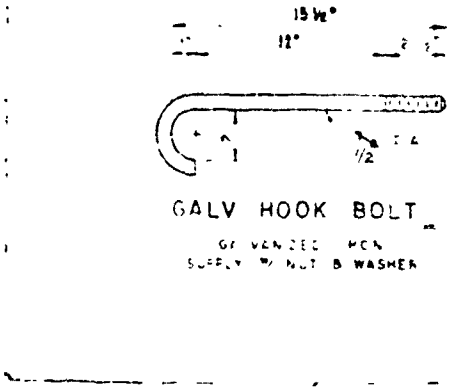
SECTION A-A

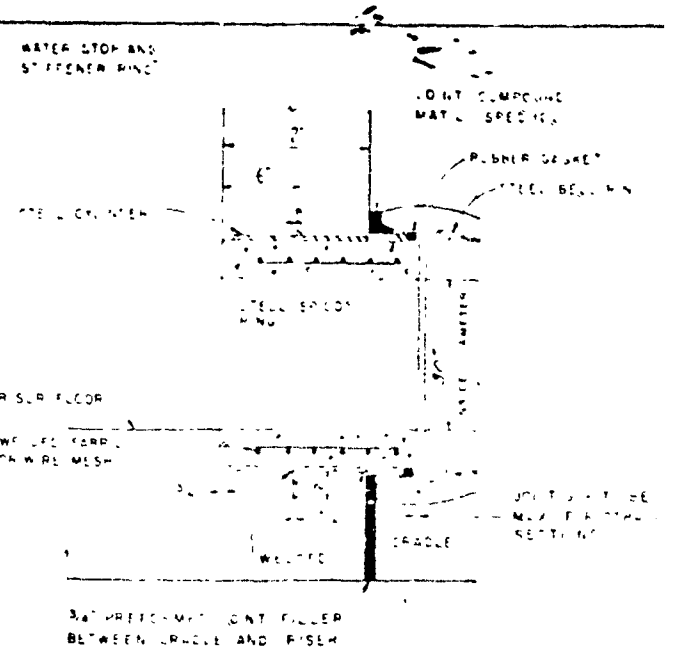


SECTION B-B

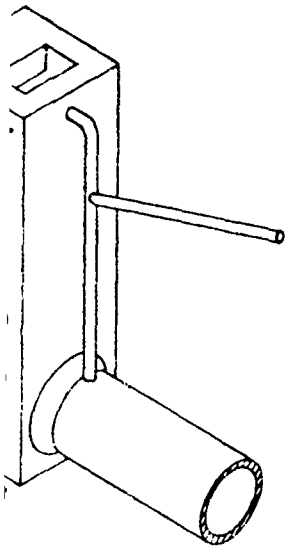
NOTE
ENTIRE TRASH RACK TO BE GALVANIZED IN ACCORDANCE WITH W.I.H. SPEC. #9

TRASH RACK DETAILS



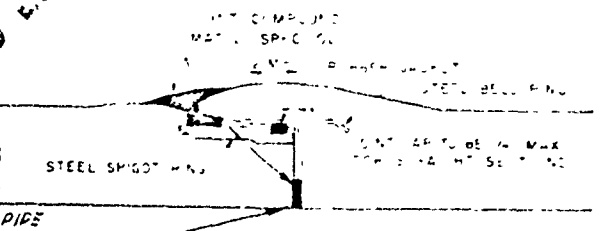


SPIGOT RING WALL FITTING



SOMETRIC

AS BUILT



NOTE:
INSTALL AFTER PIPE IS IN IT'S FINAL LOCATION AND AFTER POSITION HAS BEEN CHECKED JOINT COMPOUND TO BE PLACED IN LOWER HALF OF PIPE ONLY.

DETAIL OF REINFORCED CONCRETE WATER PIPE JOINT

NOTE
ENTIRE TRASH RACK TO BE GALVANIZED IN ACCORDANCE WITH W.I.H. SPEC. #9

BILL OF MATERIAL

LOCATION	ITEM	SIZE	LENGTH	QUANTITY
TRASH RACK	(A) ANGLE IRON	1" x 1" x ⅛"	8'-0"	4 ✓
	(B)		1'-0"	4 ✓
	(C)		1'-11½"	5 ✓
	(D)	1" x 1" x ⅛"	1'-0¾"	8 ✓
	(E)		2'-1½"	4 ✓
	GALV. PIPE SLEEVE	5.6" O.D.	1'-0"	4 ✓
	HOOK BOLTS W/NUT + WASHER GALV.	½" DIA	1'-3"	6 ✓
AIR VENT	GALV. STD. STR. PIPE	4" DIA		
	180° ELBOW, GALV.	4" DIA		1 ✓
	90° ELBOW, GALV.	4" DIA		1 ✓
	CAP SCREEN, GALV.	4" DIA		1 ✓
			100'-6"	

FINCH HOLLOW, LITTLE CHOCONUT & TROUT E
WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 30 - TROUT BR
TRASH RACK, VENTING TUBE & MISC DET
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Lee Beck 5-65
W.H. MORDEN May 65
Ben Simmons 5/65

12
NY-20

TP 1, C/L ELEV. 1140.8

0	1	Topsoil
1	10.5	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 2, C/L ELEV. 1103.7

0	1	Topsoil
1	8.5	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)
8.5+		Bedrock

TP 3, C/L ELEV. 1119.4

0	1	Topsoil
8	11.5	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 4, C/L ELEV. 1135.7

0	1	Topsoil
1	7	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 5, C/L ELEV. 1150.0 (Dozer Trench)

0	3	Gravel - very high in fines and sands - very loose and dry - brown - mod. perm. (GM)
3	6	Shale, weathered extensively.
6	+	Shale, unweathered.

NOTE: These are average depth values, as this pit was dug diagonally down across the abutment with a bulldozer.

DH 5, C/L ELEV. 1111.5

N =

59, 100/0.4, 82, 101, 84, 109 (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - grayish brown to brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

10.8

NDH, 97.5%, 100% (Sh)

Shale, some zones approaching a siltstone - badly fractured at surface, ranging to moderate at 15' depth and thick bedded below 20' depth - gray - Enfield formation of Upper Devonian - moderately hard - horizontal bedding.

25.8

Flow test 10.3-20.8 k = 0.35 ft/day

DH 6, C/L ELEV. 1133.1

N =

31, 88, 64, 34, 36, 46, 79, 44, 28 (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - grayish brown to brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

15.3

NDH, 77% (Sh)

Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - hor. bedding - Enfield formation of Upper Devonian - moderately hard - some clayey seams.

20.6

TP 101, Borrow, ELEV. 1148.5

0	1	Topsoil
1	11	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders down to 8' - many boulders from 8'-11' - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 102, Borrow, ELEV. 1161.6

0	1	Topsoil
1	12	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). D.S. 102.1 (GM)

TP 103, Borrow, ELEV. 1161.0

0	1	Topsoil
1	11.5	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist except minor seepage at 10.5' (till). (GM)

TP 104, Borrow, ELEV. 1143.1

0	1	Topsoil
1	--	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 105, Borrow, ELEV. 1172.8

0	1	Topsoil
1	10.5	Gravel - fairly well graded down to fines (3%-10%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

DH 106, Borrow, ELEV. 1175.2

N =

68, 80/0.2 (cobble), 132, Dry tube SPLR., NDH (see core photo) (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

14.2

Gravel, well graded & fairly high in fines - typical till texture - grayish brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

27.2

39.0

DH 107, Borrow, ELEV. 1171.8

N =

39-40/.3, 57-60/0.2, 100/0.4, 81-82/0.2 (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

20.0

Dry tube SPLR. (GM)

Gravel, well graded & fairly high in fines - typical till texture - grayish brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

RB (36.6)

Hard shale cobbles, vertical & irregular (based on drilling action & return of cuttings).

RB (40.0) (Sh)

Probable shale bedrock. 3" core obtained with carbide bit dry tube sampler.

41.5

DH 108, Borrow, ELEV. 1166.8

N =

Dry Tube Splr. (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

16.5

NDH, 100% (Sh)

Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - hor sortal bedding - Enfield formation of Upper Devonian - mod. hard - some clayey seams.

20.5

DH 109, Borrow, ELEV. 1150.9

N =

Dry Tube Splr. (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - grayish brown to brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

15.0

NDH (GM?)

Cobbles & boulders at close intervals in the till.

19.0

100, 66, 70 (GM)

Gravel, well graded & fairly high in fines - typical till texture - grayish brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

25.0

DH 110, Borrow, ELEV. 1153.0

N =

Dry Tube Splr. (GM)

0.0 Gravel, well graded & fairly high in fines - typical till texture - grayish brown to brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.

19.6

DH 110 continued

N =

94, 175 (GM)

19.6 Gravel, well... till, texture... Wisconsin t...

AI

22.0 Shale, some... badly fract... bottom of ...

Sh

Drilled from ... hard - some ...

26.5

TP [illegible], Borrow, ELEV. [illegible]

N =

118

0.0 Gravel, well... typical till... permeable - ... very dense.

GM

RB

12.0 Silt, trace... moist - slow... [illegible]...

Dry Tube Splr. ML

RB

16.4 Gravel, well... till texture... Wisconsin ti...

Tube Splr. GM

RB

56

25.1

TP 202, Emer. Sp., ELEV. 1152

0	1	Topsoil
1	10	Gravel - fairly ... occasional 10"-1... cobbles - brown dry at top to m...

TP 203, Emer. Sp., ELEV. 1157

0	1	Topsoil
1	9.5	Gravel - fairly ... occasional 10"-1... cobbles - brown dry at top to m...
9.5	11	Silt - numerous ... perm. - moist.
11	12	Silt - nearly pu... perm. - wet (no ...

TP 204, Emer. Sp., ELEV. 1155.

0	1	Topsoil
1	10.5	Gravel - fairly ... occasional 10"-1... cobbles - brown ... perm. - dry at t...
10.5	11.5	Silt - numerous ... perm. - moist.

TP 205, Emer. Sp., ELEV. 1152.

0	1	Topsoil
1	12	Gravel - fairly ... occasional 10"-1... cobbles - brown. ... perm. - dry at t...

DH 206, Emer. Sp., ELEV. 1147

N =

Tube Splr. 15, 12, 10, 14, 69, 127 (GM)

0.0 Gravel, well ... typical till t... permeable - ... very dense.

17.0 Gravel, well ... typical till t... slowly permeabl... drift - very d...

17.6

NDH Core (till)

24.0

DH 206, Emer. Sp., ELEV. 1171

N =

59, 89, 46, RB, 41, 53, 37 (GM)

0.0 Gravel, well ... typical till t... moist - slowly ... Binghamton drift ...

2.6 Silt, ... slowly ... Wisconsin ...

Dry Tube Spar. (GM)

25.1

DH 110 continued

94	19.6		Gravel, well graded w/high % of fines - typical till texture - gray - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
176	GM		
	22.0		
AI	Sh		Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - horizontal bedding - Enfield formation of Upper Devonian - mod. hard - some clayey seams.
	26.5		

TH 2, Inner, ELEV. 1186.9

	0.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
18	GM		
46	12.0		
RB			Silt, occasional stones (2-3/4" - gray - moist - slowly permeable - probably Binghamton formation - stiff.
Dry	ML		
Tube			
Splr.	16.4		
RB			Gravel, well graded w/high % of fines - typical till texture - gray - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
Tube	GM		
Splr.			
RB			
56	25.1		

TP 201, Emer. Sp., ELEV. 1158.7

0	1	Topsoil
1	10	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 202, Emer. Sp., ELEV. 1157.1

0	1	Topsoil
1	9.5	Gravel - fairly well graded to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)
9.5	11	Silt - numerous pebbles - brown - dense - slight perm. - moist. (ML)
11	12	Silt - nearly pure - blue gray - dense - slight perm. - wet (no seepage in pit). (ML)

TP 203, Emer. Sp., ELEV. 1155.5

0	1	Topsoil
1	10.5	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). I.S. 20.1 (GM)
10.5	11.5	Silt - numerous pebbles - brown - dense - slight perm. - moist. (ML)

TP 204, Emer. Sp., ELEV. 1157.2

0	1	Topsoil
1	12	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

DH 205, Emer. Sp., ELEV. 1171.9

	0.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
21	GM		
03			
42			
69			
27	17.0		Gravel, well graded & fairly high in fines - typical till texture - grayish brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
be	GM		
r.	21.0		

DH 206, Emer. Sp., ELEV. 1171.2

	0.0		Gravel, well graded & fairly high in fines - typical till texture - grayish brown to brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
39	GM		
96			
18			
53			
37	21.6		Silt, occasional stones (2-3/4" - gray - moist - slowly permeable - probably Binghamton Lacustrine Wisconsin age - stiff.
re	ML		
r.	25.0		

DH 2 [illegible], ELEV. 1174.1

5			
	0.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
RB			
Tube	GM		
Splr.			
RB			
Tube			Gravel, well graded with [illegible] - very silty - gray - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
Splr.			
RB			
Core			
(till			
	22.0		

TP [illegible], Emer. Sp., ELEV. 1170.[illegible]

0	1	Topsoil
1	7	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 301, Prin. Spl., ELEV. 1116.9

0	1	Topsoil
1	11	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - slight perm. - dry at top to moist (till). (GM)

TP 303, Prin. Still. Basin (Alt.) ELEV. 1103.7

0	2	Boulders, leaves & gully wash material, including one golf ball.
2	7	Gravel - fairly well graded down to fines (30-40%) - occasional 10"-12" flaggy boulders with many 4"-6" cobbles - brown - dense to very dense - wet from top to bottom (till). (GM)

TP 304, Emer, ELEV. 1117.8

0	2	Stream gravels
2+		Bedrock.

DH 305, Prin. Sp., ELEV. 1129.0

8			
	0.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
102	GM		
11-50/0.1			
	13.2		
NDH			Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - horizontal bedding - Enfield formation of Upper Devonian - moderately hard - some clayey seams.
96%	Sh		
	16.0		

DH 306, Prin. Sp., ELEV. 1115.0

8			
	0.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
16	GM		
25-25/0.3			
	6.8		
NDH			Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - horizontal bedding - Enfield formation of Upper Devonian - moderately hard - some clayey seams.
95%	Sh		
	16.8		

DH 3[illegible], Prin. Sp., ELEV. 1111.6

8			
	0.		Over fill, boulders & assorted rubble
RB			
	3.0		
WC			Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
RB	GM		
	7.5		
NDH			Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - horizontal bedding - Enfield formation of Upper Devonian - mod. hard - some clayey seams.
94%	Sh		
	11.6		

DH 3[illegible], Prin. Sp., ELEV. 1122.[illegible]

	1.0		Gravel, well graded & fairly high in fines - typical till texture - brown - moist - slowly permeable - Wisconsin till, Binghamton drift - very dense.
RB			
RB	GM		
RB			
	10.0		
NDH			Shale, some zones approaching a siltstone - badly fractured at surface, ranging to mod. at bottom of run - gray - horizontal bedding - Enfield formation of Upper Devonian - moderately hard - some clayey seams.
100%	Sh		
	13.0		

LEGEND

Test Hole Numbering System

Centerline of dam	1 - 99
Borrow area	101 - 199
Emergency spillway	201 - 299
Centerline of outlet structure	301 - 399
Stream channel	401 - 499
Relief wells	501 - 599

[illegible] CLASSIFICATION SYSTEM SYMBOLS

GM Silty gravels; gravel-sand-silt mixtures
ML Silts; silty, v. fine sands, sandy or clayey silts

KIND OF SYMBOL

Sh Shale

SAMPLE

DS Disturbed

[illegible] OF DH 1038

N = Number of blows required for 1-ft. standard penetration, using 1-3/8" I.D. split barrel sampler, 140 lb. hammer, and 30" drop. ASTM D 1586.
4-22 —

—— 6.. Depth in hole (ft.)
GM Unified Soil Classification Symbol
—— 12.0

RB Roller bit to advance hole by wash boring
—— —— 17.0 Depth in hole
WC = ore core, 2-1/8" diameter
73%
Percent [illegible] core recovery in each drill run
50%
90% Sh Bedrock symbol

[illegible]

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BR
WATERSHED PROJECT
[illegible]
LOGS OF TEST HOLES
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Investigated by _____
XXXXXX

_____ Geologist _____ Apr 2 20..

8